

Faculty of Engineering, Computing and the Environment

Project Title: “Shattered Skies”

MA Game Development (Design)

Game Design Document

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WARRANTY STATEMENT

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Shattered Skies

Game Design Document

CHAPTER 1: GAME OVERVIEW

(1) TAGLINE:

A fractures world, a united purpose.

(2) GAME TYPE:

Multiplayer (Co-op)

(3) NUMBER OF PLAYERS REQUIRED:

2 players

(4) TARGET AGE GROUP

PEGI 12 / ESRB T for Teen (mild violence, complex themes, and abstract conflict resolution)

(5) INTENDED GAME SYSTEM/S:

PC, PlayStation, Xbox

(6) GAME ENGINE

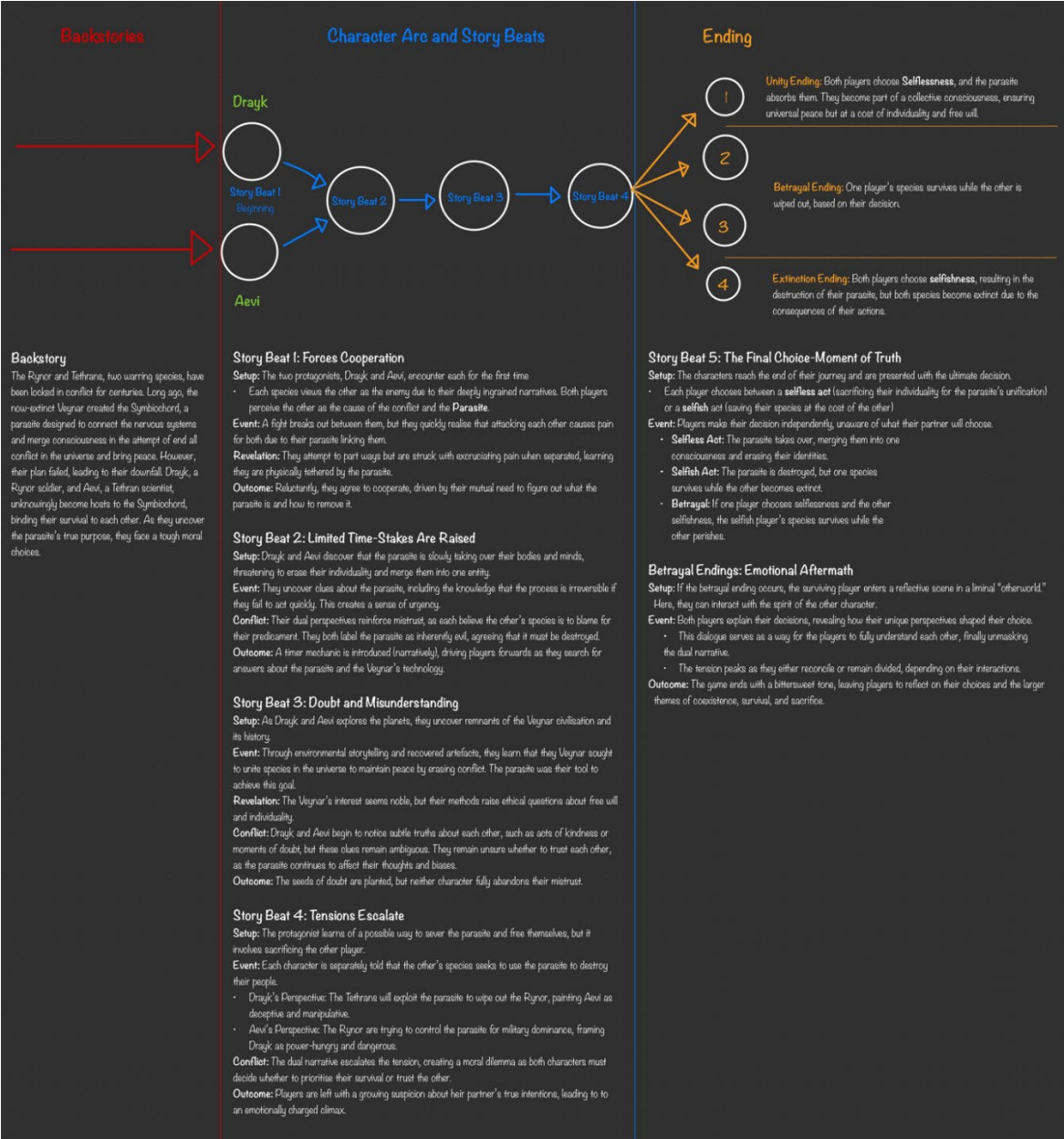
"Shattered Skies" is developed using the Unity engine for its ease of use. The game will be designed for a 'flat' screen experience.

CHAPTER 2: GAME OUTLINE AND NARRATIVE

(1) GAME OUTLINE

Shattering Skies is a two-player narrative-driven exploration adventure set in a miniature solar system filled with alien landscapes and ancient secrets. The story focuses on Drayk and Aevi, two members of opposing alien species (Rynor and Tethrans) who become infected by a mysterious parasite that physically chains them together. Their fates are also merged due to the parasite, meaning if one player dies so does the other. This forces them to collaborate despite their deep-seated distrust and conflicting ideologies.

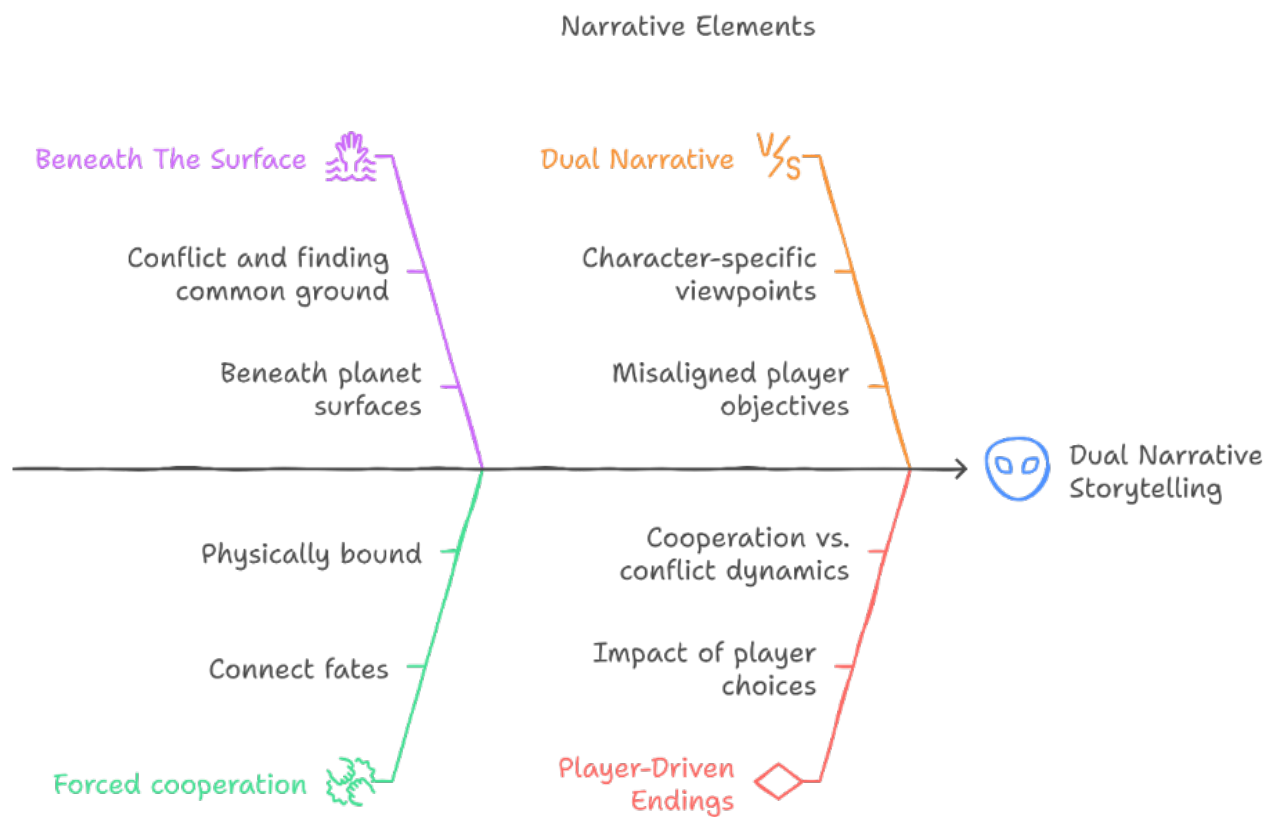
(2) NARRATIVE STRUCTURE



The diagram below outlines the story beats,

pacing and the multiple endings of the game.

(3) NARRATIVE SUMMARY



I. Backstory

The Rynor and Tethrans, two warlike civilisations, have been fighting for centuries, driven by deeply rooted suspicion. The long-lost Veynar civilization, in a bid to force peace, created the Symbiochord, a parasite that would unite warring species by connecting their nervous systems. The Veynar's plan failed, and they became extinct. Drayk, a Rynor soldier, and Aevi, a Tethran scientist, become unwitting hosts to the Symbiochord, forcing them to cooperate in order to live. They discover the true function of the parasite and are faced with a moral decision: surrender their individuality for the common unity, kill the parasite at great risk, or be betrayed with shattering consequences.

II. Shatterstorm Event

The Shatterstorm was the damned, unforeseen outbreak of the galaxy-encompassing Symbiochord parasite. Caused by the failure of an aeon-old Veynar containment facility, it had unleashed wave after wave of its parasitic spores into space, destroying planets and ecosystems. The Rynor and the Tethrans had quite literally turned into mortal enemies over centuries of warfare, and the coming of the parasite to start infesting their worlds caused an astonishingly high number of deaths. The event crushed their fragile civilizations and drove those who survived into a desperate struggle for existence—and for what scant resources remained. Amidst the chaos, the Symbiochord united individuals from opposing tribes, forcing collaboration as they discovered hidden truths about the Veynar's failed pursuit of peace.

III. Parasite

The Symbiochord is an ancient, enigmatic parasite that was developed by the Veynar civilization to impose harmony among fighting species. It connects the nervous systems of the hosts and makes them cooperate by inflicting pain when they fight or move away from each other. Though it imposes harmony with augmented capabilities, it increasingly unites the consciousness of the hosts, posing a threat to their individuality. Released during the cataclysmic Shatterstorm, the Symbiochord propagated throughout the galaxy, destroying planets and pushing competing species such as the Rynor and Tethrans into uneasy alliances. Both a curse and a survival mechanism in one, it compels its hosts to deal with trust, empathy, and cooperation.

IV. Spaceship Eclipser

The Eclipser is a mysterious spaceship discovered after the Shatterstorm. The ship itself merges Rynor's cutting-edge war tech and Tethran's cutting-edge bioengineering in a manner indicative of an unlikely past partnership. The ship, a portable refuge for Aevi and Drayk, contains secrets about its vanished crew and the reason behind its species' conflict. As they step into its interior, the Eclipser is a representation of both the potential for unification and the tension between their two very different modes of existence. Its mysteries push the pair to confront their past and to imagine a different future.

V. Story Beats and Ending

Refer to 2.2 Narrative Structure diagram.

(4) OBJECTIVES

The primary objective is for the players to work together to find a way to remove the parasite that has physically bound them together. The parasite enforces their proximity and survival: if one dies, the other dies as well. This forces collaboration between the two opposing species, whose inherent differences often lead to tension.

(5) DUAL NARRATIVE

Hidden Perspective:

- Each player holds key pieces of the overarching story that the other is unaware of. The inability to fully share their perspective creates distrust and suspicion.
- Actions speak louder than words; as players solve puzzles and survive challenges together, they begin to build an unspoken bond of trust through shared experiences.
- However, this bond is fragile—misunderstandings and the history of conflict between the species remain obstacles.
- The tension between cooperation and mistrust remains central, as players must decide whether to fully trust, manipulate, or betray their partner.

(6) GAME FLOW

The game emphasises progression through knowledge and player-driven decisions rather than traditional skill trees or upgrades. Players navigate between planets in a shared spacecraft, solving puzzles, gathering resources, and piecing together the story of the parasite and their connected species.

The game is a balanced combination of story-based, mechanics-based, and emergence gameplay elements. The dual narrative is central to the experience, driving player engagement through conflicting perspectives and emotionally impactful decisions that culminate in multiple endings. Mechanics play a vital role, with asymmetrical abilities requiring players to cooperate and rely on each other to progress through puzzles, manage shared systems like the spaceship, and navigate challenges. Emergent gameplay is equally significant, as the communication mechanics—such as distorted voice chat and gesture-based interaction—encourage players to develop unique ways to communicate, shaping their relationship. This fusion ensures the game delivers both a compelling narrative and engaging, cooperative mechanics while allowing players the freedom to shape their journey and outcomes.

(7) CHALLENGES AND SOLUTIONS

The primary challenges revolve around:

Communication Barriers: Players must overcome distorted voice chat, non-verbal gestures, and limited telepathy to work together effectively. Players need to find creative ways to overcome communication barriers using non-verbal communication,

Environmental Hazards: Each planet features unique dangers such as lava, storms, and predators, requiring careful navigation and planning. Additionally, space hazards such as asteroid fields need to be avoided as they're traversing to different planets.

Puzzle Solving: Cooperative puzzles demand coordination and shared problem-solving, with solutions often requiring both players to perform simultaneous actions.

Resource Management: Players must prioritise what to gather and transport, balancing risk and reward as they venture into hazardous areas. Additionally, players will have limited fuel and oxygen, which they will have to manage in their expeditions.

(8) PROGRESSION AND REWARD SYSTEM

The upgrade system in the game is designed to encourage exploration, resource management, and cooperation between players. As players traverse different planets, they gather resources unique to each environment. These resources include abundant raw materials, rare items, and advanced blueprints, often found in hazardous areas requiring teamwork to access. Players can carry only 3-4 resources at a time, necessitating prioritisation and coordination. Upgrades enhance the ship's capabilities, including improved defences, faster engines, and advanced tools for traversal or combat which can help the players tackle greater challenges, like more hostile planets which is very difficult to navigate at the start of the game with the base spaceship. These upgrades are mostly quality of life changes, however some upgrades are more important for progression, such as improved thruster for higher gravity planets like Dunestorm. Players can potentially become stuck on a planet.

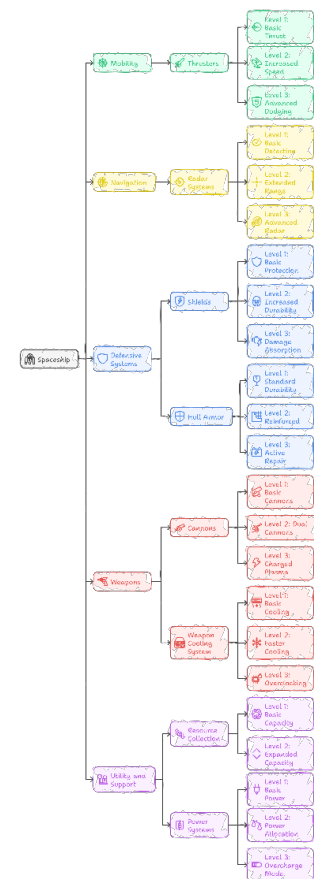


Figure 1 Spaceship Upgrades

Category	System	Level 1	Level 2	Level 3
Mobility	Thrusters	Basic thrust for movement	Increases speed and efficiency	Advanced dodging manoeuvres with shorter cooldowns
Navigation	Radar Systems	Basic hazard and resource detection	Extended range with clearer visuals	Real-time advanced radar system
Defensive Systems	Shields	Basic protection	Increase coverage and durability	Absorbs damage and converts it to a temporary energy boost
	Hull Armour	Standard durability	Reinforced against collisions and small projectiles	Active hull repair (slow passive restoration overtime)
Weapons and Offense	Cannons	Basic laser cannons with low damage	Dual cannons for Great firepower	Charged plasma shots for high damage
	Weapon Cooling System	Basic cool down system	Faster cooling with automatic cycles	Overclocking for temporary boosts
Utility and Support	Resource Collection	Basic cargo capacity	Expanded capacity for rare materials	-
	Power Systems	Basic powerful essential functions	Power allocation (place can reroute energy)	Overcharge mode for temporary enhancements

(9) CHARACTER ABILITIES:

Drayk:

This character strong connection with nature will enable him to interact with some of the planetary system's environment. This will include building bridges with branches, open paths in nature, create protective walls with rocks and sand, repairing the ship, and little tower building. For the player to understand that an object can be interactable it would be highlighted. To enhance cooperation, while using this mechanic Drayk will not be able to move, having to trust Aevi and potentially putting him a risk.

Aevi:

This character's main ability is related to his mind and resulting in telekinesis. This will mean that she could move environmental elements willingly. This includes moving rock blocks or preventing an asteroid to collide with the spaceship.

Both main abilities may seem the same, but the difference relies on the way they interact with each object. Drayk, for example, must interact with his environment and these objects in a naturalistic way. On the other hand, Aevi can just move them using her powers, not modifying them willingly.

The reward and upgrade system are based on the gathering of knowledge between the two of them and the way they communicate this information. These upgrades will include:

- More powerful main abilities. Drayk could create larger bridges or Aevi could move blocks further away.
- Spaceship reparations and upgrades. This could be done by gathering the materials necessary for this (metal, wood, etc.) and informative notes that can be found all around the solar system.
- Ancient language. These is the most crucial upgrade of the game. This language was the one used before the *shatterstorm* and is the one used in the informative notes. By learning this language, they can discover crucial information of the Zyrium Crystals as well as how the Symbiochord can be extracted. This work as ability points.

(10) GAMEPLAY AND STORY

Both gameplay and mechanic draw from the premise of miscommunication between both characters since they are both from a different species.

The planetary system was designed with non-linearity in mind. It is a metroidvania style of gameplay where players explore various planets and gaining knowledge about how to access new areas in the solar system. For example, the areas submerged underwater could be accessed when the tides are low due to the gravitational pull of a planet which players can find out in other planets. In other areas the players could need to cover themselves from hazardous weather like sandstorms. Everything would be designed so that the players must learn how to interact with this dangerous planetary system by observing, analysing, understanding and then

applying their knowledge. There will be various puzzles, requiring cooperation and knowledge of its solution or secret.

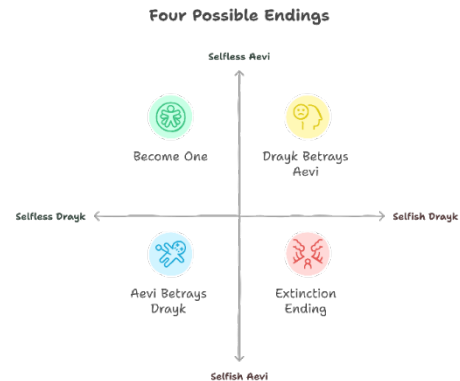
(11) VICTORY CONDITIONS AND MULTIPLE ENDINGS

The characters reach the end of their journey and are presented with the ultimate decision. Victory conditions are influenced by the choices they make:

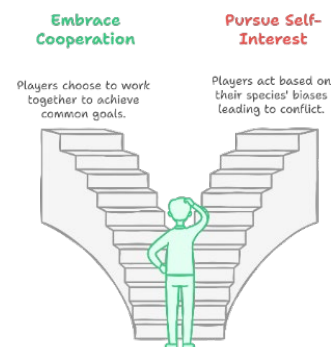
- **Unity Ending:** They become part of a collective consciousness, ensuring universal peace but at a cost of individuality and free will.
- **Betrayal Ending:** One player betrays the other, either gaining control of the parasite or ensuring their species' dominance.
- **Mutual Destruction Ending:** A lack of cooperation results in both players failing, leading to their deaths and the parasite's continued existence.
- Players make their decision independently, unaware of what their partner will choose.
- Each player chooses between a selfless act (sacrificing their individuality for the parasite's unification) or a selfish act (saving their species at the cost of the other)

VI. Failure

- Players lose if their spacecraft is destroyed, they fail critical challenges, or any of the players die.



How will players navigate the narrative and make choices?



CHAPTER 3: CHARACTERS

(1) PLAYER CHARACTERS

I. Drayk

Race: Rynor

Class: Battle-Hardened Warrior

Personality Traits: Stoic, Resilient, and Honorably Deep. Loyal to his companions, he follows a code of duty, but one that sees strength and protection as the mainstays. **The** entirety of a warrior's life has seen him through the loss of his family with a feeling of distrust toward external forces.

Background: Drayk was born in the warrior caste and has lived his whole life defending his people from the threats of the outside world. A veteran **in** many battle campaigns, he has

become an individual of considerable tactical acumen and certain techniques for survival. War and struggle have hardened him to the very bone, and the emotional scars he carries rarely enable him to open to others.

Skills and Abilities: Master of close-quarters combat, proficient in nearly all weapons, knowledgeable in battlefield tactics—a physical force with stamina none of his contemporaries can match.

Appearance: Drayk is a muscular, battle-scarred, rugged figure. His skin is leathery and thick, even for a Rynor, and his horns curve back. His eyes glow faintly in low light.

To redeem past failures, Drayk desperately tries to protect the very people he means to protect, especially Aevi, whom he views as the key person to unlock the mysteries of the Symbiochord.

II. Aevi

Race: Tethran

Role: Brilliant Scientist

Personality Traits: Aevi likes asking questions all the time and is very quick-witted about it. She is rather analytic about approaching things but would tend towards logic and reason in that measure rather than emotion; she can feel deeply for others if they are in trouble.

Background: Raised in a Tethran society that was innovative and knowledge-based, Aevi was brilliant at bioengineering, especially in the research of symbiotic organisms. Her groundbreaking theories about interspecies bonds gained her recognition, but they also brought risks from those who wanted to commercially exploit her work.

Skills and Ability: A biochemistry, genetic manipulation, and a technology-integrating master. Aevi's quick mind allows her to understand complex situations and come up with creative solutions. She is also adept at constructing tools and devices from scraps of things.

Appearance: She has a lean physique with fluid motion. Her Tethran looks consist of quite fine, almost glowing skin patterns that change when she feels something, and large, intelligent eyes.

Motivations: Aevi is led to learn more about the Symbiochord and its reality of being capable of bringing two or more different species together in concord. This makes her union with Drayk a good opportunity to research the impact of such a connection, though she doesn't wish to be manipulated by other individuals seeking to take advantage of them.

CHAPTER 4: GAME WORLD

(2) GAME WORLD AND SETTING

Introduction: The Shatterstorm world is one devastated by apocalyptic events throughout its history, where the planetary crust has been broken into a network of floating landmasses, linked by ancient rotting bridges and technological scaffolding.

Planetscape: The ruins of Shatterstorm are ice-cold, floating boulders of rock, extending ruinous deserts of the remnants of ancient-advanced civilizations, strewn with all but barren

wastelands. Up there, the sky is just a swirling mosaic of storm clouds, glowing energy fissures, and floating debris.

Ecosystems: Life has adapted to the slow chaos caused by it. Bioluminescent floras sprout from dark crevices, strange chimeric creatures move over the uneven ground. Ecosystems wildly vary, so in one place there can be alien, lush jungles or in another, desolate plain.

Technology and Artifacts: Scattered across the world are remnants of advanced technology—gravity stabilizers holding landmasses afloat, ancient ruins filled with cryptic symbols, singing energy cores filled with long-forgotten power. These are relics that hold the secrets of the world's past and the potential salvation of its turmoil.

Appearance: A fabulous landscape of destruction and beauty. Storm-wracked skies send sickly light upon flying shrapnel and dyed chasms. The fractured horizon is spiked with kadura stones, coursing rivers and shattered mountains.

Species: Scavengers, nomads, and even solitary tribesmen can be found here. Most only scavenge to survive amidst the ruins. Some seek the lost fragments of the lost technology and society, seeking to restore them or utilize them to dominate the others. Adaptations: Both the Rynor and the Tethrans adapt, but into different ways from one another.

Atmosphere: The world's air is thick with an acrid cocktail of ozone from the constant electrical activity and an earthy aroma from the ruins as nature reclaimed them. Further off, distant sounds of storms mix with crackling energy and the cries of something unknown.

Meaning: A dangerous, yet beautiful setting, the Shatterstorm reflects the dangers of Drayk and Aevi's journey, along with the strength they find needed to make their webbed ways through two destinies too closely twined.

The game takes place in a miniature solar system. Players navigate various small-scale planets, each with different ecosystems, environmental hazards, and secrets. From ancient ruins to alien landscapes, each planet holds clues and challenges that progress the players' journey. The players can't leave the solar system.

(3) STRUCTURE OF THE SOLAR SYSTEM:

- **Pyroterra:** This planet is fully covered in lava lakes at the exception of some tunnels that can be found beneath the surface. The tectonic plates and the nucleus here are extremely unstable forming volcanoes and making them erupt assiduously.

- Gravity: 2.7 m/s^2 ; Low Gravity
- Size: 4,500 kilometres
- Average Temperature: $1,570^\circ\text{C}$
- Ecosystem: Lava lakes and volcanic rocks



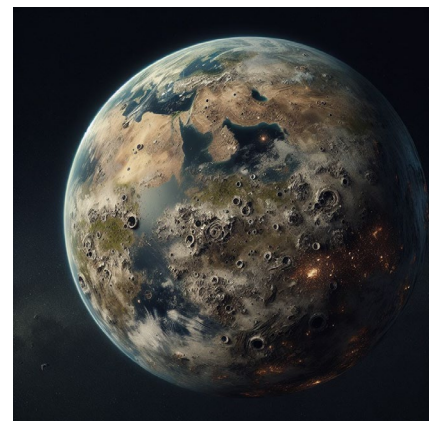
- **Dunestorm:**

Enormous, sandy, and desert planet. Buildings were built underground for escaping the fast winds and the sandstorms.

- Gravity: 17.01 m/s^2 ; High Gravity
- Size: 9,645 kilometres
- Average Temperature: 61°C
- Ecosystem: Sandy, rocky and with fast winds

- **Remnara:** Earth-like planet. This aftermath scenario of a great war could be the only habitable zone of this planetary system. The characters can interact with the remains on this planet to build in.

- Gravity: 9.1 m/s^2 ; Earth-like Gravity
- Size: 5,580 kilometres
- Average Temperature: 18°C
- Ecosystem: Plants and water





- **Tidalor:** This moon orbits around a big gaseous planet. On the surface it is covered in water, however underneath it there's some rock formation tunnels, some of them with no water. Due to the gravitational pull of the planet that it orbits, the tides behave accordingly, creating new paths and destroying others depending on the position of the moon.

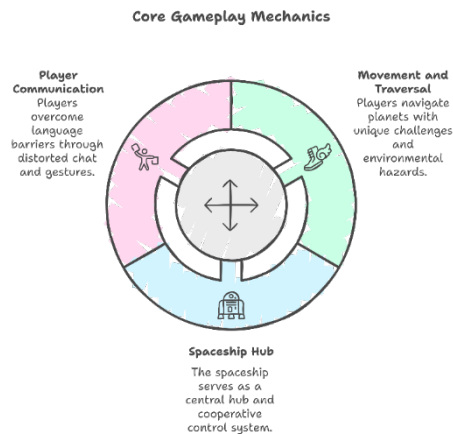
- Gravity: 1.03 m/s^2 ; Low Gravity
- Size: 2,100 kilometres
- Average Temperature: 7°C
- Ecosystem: Rocks underneath the water.

- **Cryonix:** This dwarf planet is the coldest, smallest, and furthest from the sun on the planetary system. It is a desertic iced planet, where the Zyrium Crystals are original from. Underneath the ice layers it lies crucial knowledge about these crystals and how these are important to get rid of the parasite.

- Gravity: 0.51 m/s^2 ; Extremely Low Gravity
- Size: 1,150 kilometres
- Average Temperature: -34°C
- Ecosystem: iced desert full of crystals



CHAPTER 5: GAME MECHANICS



(1) CORE MECHANIC

III. Player Communication

A standout mechanic involves the challenge of communication. Players control two alien species with no shared language or cultural understanding.

Voice Chat:

- The voice chat is distorted using a voice changer plugin in Unity, making words unintelligible from the other players perspective, mimicking how the species cannot understand each other.
- Players can still convey urgency and emotion but cannot clearly communicate complex ideas.

Design Thinking:

- Players are introduced to this mechanic at the start of the game when the players first meet, reinforcing the narrative themes of mistrust and secrecy between the two characters, and enabling the dual-narrative storytelling, as each player experiences the story through their characters perspective and biases.
- Players are restricted from sharing information, as each player hold key pieces to the overarching story that the other is unaware of, creating tension, conflict and encouraging players to interpret the other players actions.

In-Game Rule:

Players are instructed not to discuss the game's events or story outside of the voice chat. Doing this breaks the core design of the game as this restriction mirrors the characters inability to openly share their motives leaving intention ambiguous.

You must use in-game voice chat for all communication and avoid discussing the story or events outside the game.

This is essential to preserve the core experience.

Gestures:

- Non-Verbal Communication:
 - Players can perform simple gestures, requiring players to interpret intentions through visual cues.
 - Some gestures may appear different from the other players perspective, again showing the disparity in cultures and language and is intended to create a divide between the players at the beginning of the game.
- Cooperation:
 - Puzzles are designed to require gestures for cooperation, such as signalling the timing of an action or directing attention to an object.
 - These challenges force players to develop a shared language of gestures, despite their inherent differences.

Communication Resource:

- Telepathy:
 - Players can collect rare resource that allows for a brief telepathic connection, temporality removing the voice filter for 5 seconds.
 - This window gives players a chance to communicate clearly, but the constraints highlight the importance of choosing your words carefully, encouraging players to think critically about what to say.
 - These mechanics ties directly into the game's endings, as players choices during these moments-whether they choose to be truthful or deceitful-influence the choices players make at the end of the game.

IV. Spaceship Hub

Lovers in a Dangerous Spacetime (Asteroid base, 2015)

The spaceship serves as both a central hub and a traversal mechanic for navigating between planets.



- **Cooperative Controls:**
 - Players must work together to control the ship's various systems, such as steering, defence and weapons systems, inspired by ‘Lovers in a Dangerous Spacetime.’
 - The ship has realistic physics, including weight and inertia, adding skill-based challenges.
 - **Dual controls:** Each player manages specific systems, requiring constant coordination.
- **Ship Repair Mini-Games:**
 - The ship can be damaged by hazards such as asteroid fields or environmental dangers.
 - Repairing the ship becomes a collaborative mini game, encouraging teamwork.
 - **Circuit Realignment:** Players reconnect power nodes to reactivate critical systems.
 - **Seal Hull Breach:** Players patch cracks in zero-gravity environments, requiring precision and timing.
 - **Calibrate Sensors:** Players match waveforms or patterns to restore navigation functionality.

Spaceship Systems	Function
Steer	Roll, Pitch, Yaw: Navigating 3D space. Thrust: Allows movement forward and backward. Dodging Ability: A short burst of power in any direction, useful for evading hazards or enemy attacks.

Other Functions	Landing Gear: Deploy for smooth landings. Doors: • Open main entry for players. • Open resource bay to collect materials. Lights: Illuminate dark environments for safer navigation and exploration.
Defence	Shield: • 360° movement protective barrier in the middle of the ship. • Depletes with use and slowly regenerates. • Can be upgraded to cover larger areas and regenerate faster.
Weapons	Cannons: • Mounted on the left and right of the ship. • Used to destroy asteroids or hazards. • Upgrades enhance power and increase ammo capacity.
Navigation	Radar: • Detects nearby resources and hazards. • It can be upgraded to increase detection range and precision.

More details on minigames in **CHAPTER 6: GAMEPLAY**.

Dual Control System

- **Mechanics:**
 - Ship functions are distributed across various sections, requiring players to move physically within the ship to operate them.
 - Collaboration is essential for balancing roles, such as one player focusing on navigation while the other manages defence or is steering.

V. Traversal Mechanics

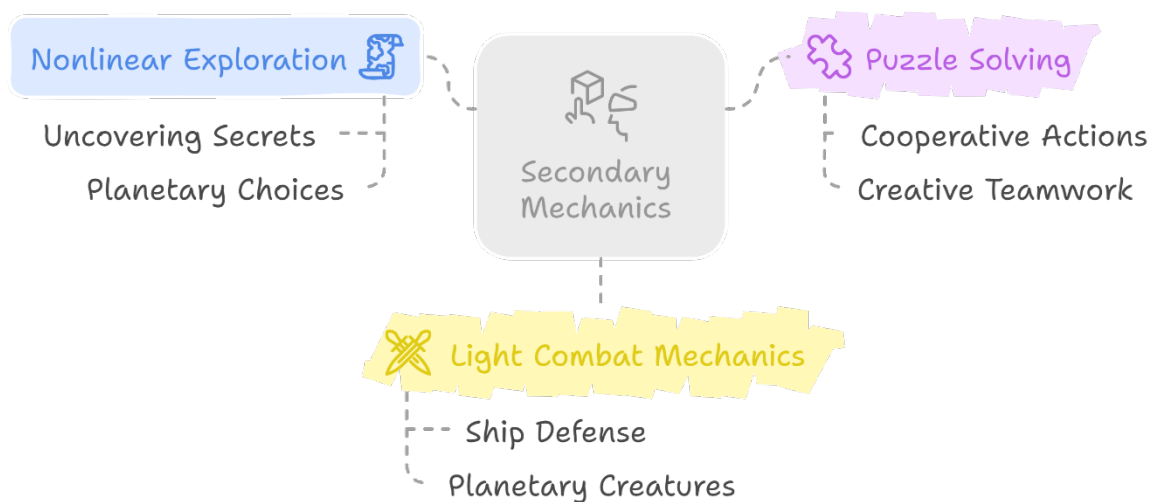
Players' movement: Aevi is quick, small and her jump is not very high, Drayk is slow, big and has a strong jump.

Jetpacks: The players will have access to these jetpacks since the beginning of the game. These let the players reach higher levels or to boost their jump. They work with fuel, so they have a limited use. They are susceptible to the weight of the character, having Aevi a better use for it since she is lighter, balancing their movements restrictions with the jump. These jetpacks create some scenarios:

- Underwater: When jetpacks are used underwater, they still function. This may help the players reach an oxygen area sooner when they are running out of air in this kind of situations.
- Booster: When both players are using the jetpacks and collide with each other, they create a booster which will help reach high levels.
 - The fuel drains when the booster is used.

- When fuel reaches 0 the player can no longer use the jet pack.
- The players can refuel in certain areas around the map and at the Eclipser spacecraft.
- The players need to manage this resource and be carefully not to be stranded in space with no boosters left.
- The players can share their fuel with each other.
- Melting ice: When in extremely low temperature situations, the players may need to melt some ice for puzzle solving.
- Burning wood and plants: Jetpacks can be used to create fire with wood, as well as burning down some plants for accessing new areas.
- Controls:
 - Activate/Deactivate: Press 'Q'.
 - Movement:
 - Up/Down: W/S
 - Left/Right: A/D
 - Forward/Backward: Arrow keys or WASD.

(2) SECONDARY MECHANICS



- **Nonlinear Exploration:** Players uncover knowledge that shapes their journey, choosing their path freely.
- **Cooperative Puzzle Solving:** Teamwork and communication are key to solving puzzles that often require simultaneous actions.
- **Light Combat Mechanics:** Minimal combat moments for defending against planetary threats or securing resources.

CHAPTER 6: GAMEPLAY

We had an approach to this planetary system to keep it as realistic and interesting as possible for the players. Every planet designed has a quality to it, as well as a different approach on its level design, and its gravity which functions as a mechanic with the jetpacks. The planets have a certain orbit, speed, and gravity that affects the players, the spaceship, and the whole world that they are in.

The players will be given free exploration since the beginning of the game. It is through understanding how this solar system works within itself and gathering information through the players' journey how they know the access to an area. An example of this could be that in one information note that the players collect there is information about a cave that can be entered only while the planet is opposite to this location.

During this journey, Aeri and Drayk must cooperate to solve puzzles that lets the access to knowledge for the Symbiochord. This parasite tides them physically and limits their movement. The structure of a puzzle will go as follow:

- Inaccessible area with and interactable object for one of the players.
- One of the players interacts with it, while the other solves them with its movement.
- Symbiochord limits their movements putting their lives at risk.
- The player interacting with the object may be at risk of being attacked having the players to manage the time.
- The puzzle is solved and the outcome of it is shared between the players.

1.1.1 Ship Repair Mini-Games:

- The ship can be damaged by hazards such as asteroid fields or environmental dangers. Repairing the ship becomes a collaborative mini game, encouraging teamwork.
- **Circuit Realignment:** Players must reconnect power nodes to reactivate critical systems by navigating an 8x8 grid maze.
 - **Cooperative Element:**
 - One player controls the power node but cannot see the maze layout.
 - The other player can see the maze, including the source and walls, and must guide their partner using directional instructions (e.g., "up," "left").
 - The distorted voice chat forces players to rely on creative communication methods, such as gestures or improvised noises, leading to the development of their own unique language over time.
 - Colliding with a wall results in a strike, with three strikes causing the ship to explode, adding urgency and tension to the task.
- **Seal Hull Breach:** Players must patch cracks in the hull in a zero-gravity environment, requiring precise coordination and timing to prevent the ship from imploding.
 - **Cooperative Element:** One player controls horizontal (left and right) movement of the welder tool, while the other controls vertical (up and down) movement. Players must align the welder tool precisely with the shape of the crack to seal it successfully. The time pressure adds tension, requiring players to synchronize their movements effectively. If they move the welder out of the damaged section, they need to start again.

- **Calibrate Sensors:** Players must align waveforms or patterns to restore navigation functionality.
 - **Cooperative Element:** One player has access to the target waveform, while the other controls the tools to adjust its amplitude and frequency. Due to the distorted voice chat, players cannot directly describe the exact adjustments needed. Instead, they must develop their own unique method of communication—such as rhythmic gestures or making noises. This will be timed, if players fail to solve the minigame in allocated time, the ship explodes. As players progress, they naturally become more efficient at this task, reflecting their growing teamwork and adaptability.

CHAPTER 7: VISUAL EXPERIENCE

The art style makes use of cell-shading and

The visual experience of ‘Shattered Skies’ is a captivating biopunk aesthetics, creating a dark and atmospheric world. Imagine gritty, neon-drenched cityscapes juxtaposed with vibrant, bioluminescent alien landscapes.

Players will experience a stark contrast between the sleek, metallic surfaces of technology and the organic textures of alien life.

Environments should range from ruined, overgrown cities to alien worlds teeming with unique flora and fauna. The Purifiers, the AI's robotic enforcers, should be both intimidating and terrifying, a blend of sleek, robotic forms and unsettling organic elements.

Goals for Shatter Skies visual theme

Marvels Stellar: Gaze in wonder at breathtaking views of nebulae, star clusters, and planetary formations. Dynamic lighting and atmospheric effects include swirling dust storms, shimmering auroras, and vibrant sunsets.

Minimalist UI: A clean and uncluttered interface that minimizes distractions and maximizes immersion.

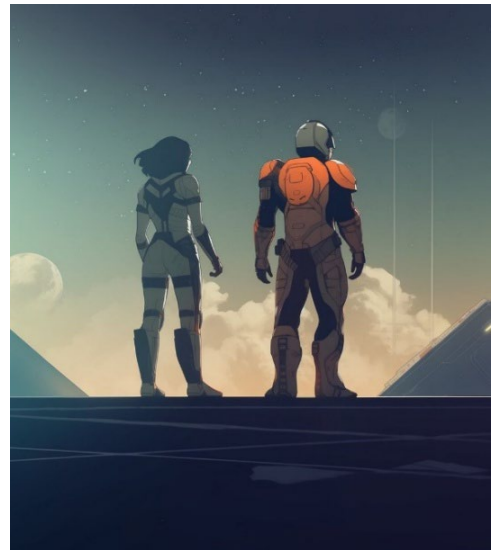
Focus on the beauty of the surroundings instead of intrusive HUD elements.

Colour Palette: Cell Shaded otherworldly and desaturated colour palettes which inspire a feeling of wonder and investigation. Wide contrasts between darkness in space from alien life.

Sense of Scale: Conveys a very spacious and lonely part of space-the players feel

inconsequential in the larger cosmic scheme of things. Awe-inspiring vistas of monumental,

celestial bodies along with breathtaking landscaping.



CHAPTER 8: AUDIO EXPERIENCE

The audio design must follow the tone and aesthetic of this game. This means that it will have a 'sci-fi' approach. The gunshots, jetpacks and the spaceship sounds follow this.

One of the most important mechanics in this game is the distorted voice chat. This creates that sense of miscommunication trying to find an alternative to it. We also give the players chance to communicate once after the collection of 'informative notes' which will remove the distorted voice chat for a brief time. This will make the players choose wisely what to communicate.

Whenever the players use their abilities, these have sound feedback for a better gameplay feeling.

In outer space there is no sound at all, since there is nothing that can make the vibration travel towards the players having a more realistic approach in this sense. However, during the shipping section of the game if the players collide with an asteroid, this is audible.

The soundtrack of the game depends on the location the players are in:

- **Pyroterra:** Fast paced, aggressive music. Choir voices for the main melody.
- **Dunestorm:** Heavy and ambience approach. String instruments primarily.
- **Remnara:** Calm and melodic music. This should make the players comfortable with music that sound familiar to them.
- **Tidalor:** Calm and in $\frac{3}{4}$ tempo. This will create sensation of constant movement which replicates the tides in this planet.
- **Cryonix:** Minimalistic music. The instruments should replicate the ambience of ice with their tone and harmonics.

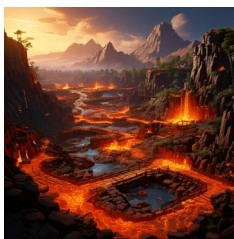
Outer space – Spaceship: Minimalistic music for the ship section, but with ominous chorus. This creates the contrast between how small the players and how enormous this planetary system is.

CHAPTER 9: LEVEL DESIGN



Overview

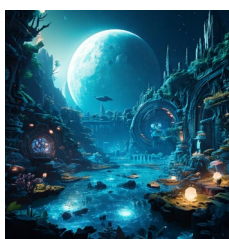
The game is set across five unique and visually striking planets, each offering distinct challenges, mechanics, and narratives to keep players engaged. Every level is designed to complement the overarching story while introducing fresh gameplay elements, ensuring players feel immersed in this dynamic universe.



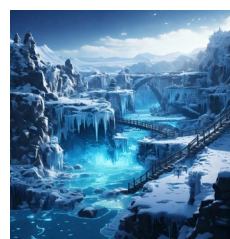
*Figure 2- 1st Level
Pyroterra*



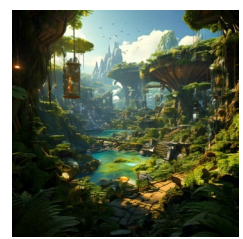
*Figure 3 - 2nd Level
Dunestorm*



*Figure 4- 3rd Level
Tidalor*



*Figure 5- 4th Level
Cryonix*



*Figure 6- 5th Level
Remnara*

1. Pyroterra:

Pyroterra is a fiery volcanic landscape filled with streams of molten lava, erupting vents, and fragile platforms. Players must work together to solve lava redirection puzzles to unlock ancient vaults while avoiding environmental hazards. The glowing red-orange environment, accompanied by rumbling soundscapes, creates a tense yet captivating atmosphere.

- **Player Progression:**
 - Introduces core gameplay mechanics: puzzle-solving, platforming, and resource gathering.
 - Players unlock **fire-resistant shields** to protect against lava splashes and minor heat damage.
 - Early-level rewards include stamina boosts and energy crystals that enhance stamina recovery for later levels.
 - **Environmental Hazards:**
 - **Dynamic Lava Flows:** Constantly shifting lava streams that require timing and coordination to traverse.
 - **Fragile Platforms:** Platforms that crumble under pressure, encouraging quick decision-making.
 - **Erupting Vents:** Sudden eruptions block paths or force players to take alternate routes.
 - **Visual and Audio Design Notes:**
 - **Visuals:** Dominated by fiery red and orange tones, glowing magma rivers, and ash-filled skies.
 - Background animations of distant eruptions enhance immersion.
 - **Audio:** Deep rumbling of volcanoes, crackling of lava, and the roar of eruptions.
 - Intense percussion during hazards contrasts with softer, eerie tones in calmer sections.
-

2. Dunestorm

Dunestorm takes players to a wind-swept desert with shifting dunes and hidden underground chambers. Sandstorms add unpredictability as players decode ancient symbols to uncover secrets buried deep beneath the sands. Golden hues, whistling winds, and a sense of desolation emphasize the mysterious nature of this level.

- **Player Progression:**

- Teaches navigation and decryption mechanics, emphasizing adaptability in changing environments.
 - Players unlock **dust repellers** to clear paths through sandstorms.
 - Rewards include **ancient inscriptions** that reveal lore and bonus resources to upgrade tools.
 - **Environmental Hazards:**
 - **Sandstorms:** Reduce visibility and disrupt communication between players.
 - **Shifting Dunes:** Constantly altering terrain forces players to navigate carefully and use environmental markers.
 - **Buried Traps:** Ancient traps hidden beneath the sands can immobilize players temporarily.
 - **Visual and Audio Design Notes:**
 - **Visuals:** Golden sand dunes, weathered ruins, and intermittent mirages.
 - Dust particles and heat distortions create a sense of harshness.
 - **Audio:** Whistling winds that intensify during storms, faint echoes of shifting sands, and distant creaking of ancient structures.
-

3. Tidalor:

Tidalor, a submerged alien moon, challenges players with underwater traversal and oxygen management. Bioluminescent creatures and glowing ruins create a magical underwater world where players must use jetpacks and cooperate to recover ancient relics. The gentle sound of flowing water mixed with eerie whale-like calls enhances the sense of wonder and exploration.

- **Player Progression:**
 - Focuses on underwater traversal and resource management.
 - Players unlock **oxygen harvesters** to replenish oxygen from underwater plants.
 - Progression rewards include jetpack upgrades for enhanced underwater mobility.
- **Environmental Hazards:**
 - **Oxygen Depletion:** Players must monitor oxygen levels and replenish them strategically.
 - **Aquatic Predators:** Hostile creatures react to noise and movement, forcing players to remain stealthy.

- **Currents and Depth Pressure:** Strong underwater currents and increasing depth challenge navigation.
 - **Visual and Audio Design Notes:**
 - **Visuals:** A surreal underwater world illuminated by bioluminescent plants and glowing creatures.
 - Dark trenches and faint light trails create a sense of mystery.
 - **Audio:** Soft whooshing of water, whale-like calls, and the hum of bioluminescence.
 - Predator encounters are accompanied by sudden, sharp audio cues.
-

4. Cryonix:

Cryonix is a frozen world of shimmering ice caves and towering glaciers. Players solve light refraction puzzles using crystals to unlock ancient cryo-chambers while navigating precarious ice bridges. The icy blue visuals, crackling ice, and faint howling winds give this level a serene yet challenging feel.

- **Player Progression:**
 - Builds on puzzle-solving and traversal mechanics introduced in earlier levels.
 - Players unlock **crystal augmenters**, tools that enhance light manipulation for solving complex puzzles.
 - Rewards include heat-resistant gear that mitigates environmental damage.
 - **Environmental Hazards:**
 - **Slippery Surfaces:** Ice bridges and ledges challenge players to maintain balance.
 - **Collapsing Ice:** Fragile ice formations crumble under pressure, creating temporary pathways.
 - **Blizzards:** Reduce visibility and increase difficulty in navigating open areas.
 - **Visual and Audio Design Notes:**
 - **Visuals:** Stunning icy blue tones refracted light patterns through crystals, and glittering ice caves.
 - Dynamic reflections add a magical feel to the environment.
 -
-

5. Remnara:

Remnara is a lush, overgrown forest teeming with alien wildlife and ruins of a once-advanced civilization. Players engage in stealth and combat to gather resources while avoiding hostile fauna. The vibrant greens, dense foliage, and rich wildlife sounds immerse players in this thriving yet dangerous environment.

- **Player Progression:**
 - Emphasizes combat and stealth mechanics, preparing players for the game's final challenges.
 - Players unlock **camouflage cloaks** to evade detection by wildlife.
 - Rewards include high-value resources and optional lore items that delve deeper into the civilization's downfall.
- **Environmental Hazards:**
 - **Aggressive Wildlife:** Hostile creatures patrol key areas, forcing players to strategize between combat and stealth.
 - **Dense Foliage:** Limits visibility, creating opportunities for ambushes.
 - **Toxic Flora:** Some plants release harmful spores, requiring players to avoid or neutralize them.
- **Visual and Audio Design Notes:**
 - **Visuals:** Vibrant greens, towering trees, and bioluminescent fungi provide a mix of beauty and danger.
 - Ruined structures overgrown with vines add mystery.
 - **Audio:** Rich soundscapes of wildlife, rustling leaves, and distant roars create a living, breathing environment.
 - Sudden audio spikes signal nearby dangers, keeping players alert.

CHAPTER 10: MONETISATION AND ECONOMY

The monetisation strategy for *Shattered Skies* is designed to enhance the player experience without creating any unfair advantage or reliance on paid content. All monetised elements are optional and cosmetic, ensuring that progression and gameplay are driven by skill, exploration, and cooperation.

I. Treasure Vaults: Unlocking Wonders of the Cosmos

In keeping with the game's theme, players can discover and unlock **Celestial Vaults**—treasure chests brimming with cosmetic items. These vaults do not rely on chance or gambling

mechanics. Instead, players know exactly what items they are purchasing, and every Celestial Vault contains unique, themed cosmetics such as alternate skins for Drayk and Aevi, spacecraft paint schemes, or decorative ship emblems. Vaults can be purchased using premium currency or unlocked as rewards for completing significant in-game achievements.

II. Ship Customisation: The Stellar Forge

Upgrading the spacecraft, central to the players' journey, involves a hands-on, immersive process. Players can collect rare minerals during planetary exploration—such as **Zyrium Crystals** or **Eos Crystals**—and deposit them into a specialised compartment on the ship called the **Stellar Forge**. The Stellar Forge is a unique system that allows players to physically place their gathered minerals into the compartment, triggering a visually rewarding upgrade process. These upgrades enhance the ship's functionality, aesthetics, and survivability but are tied strictly to in-game exploration and resource management, not monetisation.



III. Cosmetic Enhancements and Themes

Players can personalise their experience with a wide array of cosmetic options available through the in-game store. These options include:

- **Character Skins:** Alternate appearances for Drayk and Aevi that reflect their journey, such as battle-worn armour for Drayk or luminescent attire for Aevi that reacts to the environment.
- **Spaceship Customisation:** Paint schemes, hull patterns, and decorative additions that players can apply to their shared spacecraft.

- **Planet-Themed Cosmetics:** Items inspired by the unique aesthetics of each planet, such as lava-themed designs or icy crystalline effects.

Cosmetic items are purely visual and do not affect gameplay, maintaining a fair experience for all players.

IV. Transparent Economy: Fairness and Accessibility

The game employs a two-tier currency system:

1. **AstroCredits:** Earned through in-game exploration and achievements. AstroCredits can be used to unlock Celestial Vaults or purchase certain cosmetic items.
2. **Stellar Fragments:** A premium currency that players can purchase with real money. Stellar Fragments are used for convenience, allowing players to directly buy specific cosmetics.

Every item available for premium purchase can also be unlocked through gameplay, ensuring that dedicated players have access to the same rewards without spending real money.

V. Replayability and Incentives

The game encourages replayability through incentives tied to its narrative and exploration. Achieving different endings (Unity, Betrayal, or Mutual Destruction) unlocks unique cosmetics, while exploring each planet fully rewards players with rare minerals and exclusive items. Seasonal content and time-limited challenges may introduce additional customisation options, keeping the experience fresh and rewarding for returning players.

VI. Ethical Design and Player Trust

Monetisation in *Shattered Skies* is guided by ethical principles. There are no pay-to-win mechanics or gambling elements, ensuring that every player competes on equal footing. Celestial Vaults provide clear value and transparency, avoiding randomised loot drops. This approach aligns with the game's core themes of trust, collaboration, and fairness.

By focusing on cosmetic enhancements and tying upgrades directly to in-game exploration, the monetisation strategy enhances the immersive experience without compromising the integrity of gameplay.

CHAPTER 11: PROTOTYPE

The prototype for *Shattered Skies* serves as a foundational demonstration of core gameplay mechanics and systems, aligning with the vision outlined in the GDD. While limited in scope due to time constraints, it effectively captures the essence of exploration, interaction, and traversal within the game's universe. The prototype showcases the following key features:

(1) PLAYER CONTROLS AND MOVEMENT

The prototype includes a controllable player character with a basic movement system:

- **Movement:** Use the **W, A, S, D** keys to navigate the environment.
- **Sprint:** Hold **Shift** to sprint, consuming stamina.
- **Jump:** Press **Spacebar** to jump, allowing players to navigate varied terrain.

(2) PICKUPS, MINERALS, AND INTERACTIONS

Scattered throughout the levels are various pickups, each with unique functionalities. These items provide visual and mechanical feedback to players, encouraging exploration and interaction. Pickups include glowing particle effects to enhance visibility and immersion.

Players can also collect **minerals** located on the map, which are integral to the ship upgrade system. While the functionality for upgrading the ship through the **Stellar Forge** is not yet implemented, the prototype introduces the collection mechanic, laying the groundwork for future development.

(3) ALIEN NPCs

The prototype includes hostile alien NPCs that attack and damage the player. Although combat functionality is currently disabled due to technical challenges, players can evade these enemies to survive. The absence of combat highlights the need for careful movement and strategic decision-making.

(4) USER INTERFACE

The prototype features a functional UI that displays critical gameplay information, including:

- **Weapon Slots:** Placeholder icons for future weapon integrations.
- **Health Bar:** Displays the player's current health.
- **Stamina Bar:** Tracks stamina usage, particularly during sprinting.
- **Conversation Panel:** Placeholder for dialogue interactions with NPCs or other players.
- **Objective Panel:** Lists current tasks and objectives, guiding players through the prototype experience.

(5) SPACESHIP CONTROLS AND TRAVERSAL

The spaceship is a central mechanic in the prototype:

- **Entering and Piloting:** Players can enter the spaceship by pressing **F** and control it using the mouse and **W, A, S, D** keys. The **Q** and **E** keys allow the ship to roll, adding a layer of realism to movement.
- **Warping:** Players can select a planet in front of the spaceship and press **T** to initiate a warp sequence. The warping process is accompanied by animations that reflect the game's focus on atmospheric and immersive design.

(6) VISUAL AND PARTICLE EFFECTS

The prototype incorporates several visual enhancements to create a sense of immersion:

- **Animations:** Includes animations for player characters, alien NPCs, pickups, and the warping sequence.
- **Particle Effects:** Features glowing pickups, dust motes, and fog to enrich the atmosphere and reinforce the game's environmental storytelling.

(7) MENU AND ACCESSIBILITY

The prototype includes a main menu with basic functionality:

- **Join the Game:** Initiates gameplay.
- **Quit the Game:** Exits the application.

(8) SCOPE LIMITATIONS

Due to time constraints and limited programming expertise, several features planned for the full game are absent from the prototype:

- **Multiplayer Functionality:** While central to the game's design, multiplayer integration was beyond the scope of the prototype.
- **Combat Mechanics:** A player combat script was initially developed but was removed due to persistent bugs. Future iterations will refine this system to align with the game's vision.
- **Ship Upgrade System:** While the player can collect minerals during exploration, the ability to utilize these resources for ship upgrades via the **Stellar Forge** is not yet implemented.

The prototype provides a strong foundation for validating core mechanics and serves as a platform for future iterations, ensuring alignment with the broader design goals of *Shattered Skies*.

CHAPTER 12: REFLECTIVE REPORT

NICO BOGUSLAWSKI

Initial Concept and Vision: I began with the idea of creating a cooperative two-player game that was story-driven. This genre is quite rare, as cooperative games often lack much narrative depth. My initial focus was to differentiate the project by introducing a dual narrative. Typically, cooperative games share a unified story, where both players experience identical or highly similar perspectives. I proposed a structure where players experience the story through conflicting perspectives, which led to the concept of making the two protagonists sworn enemies. Additionally, the design was largely inspired by the game 'Outer Wilds' which had a

unique progression and exploration system, consisting of knowledge-based progression and non-linear exploration which was fitting for this game. Player's knowledge in our game is divided, meaning each player has key pieces to the overarching story that the other is unaware of, which in turn leads to interesting player dynamics and emergent gameplay.



Outer Wilds (Annapurna Interactive, 2012)

Narrative Structure: I wanted to avoid the complexity of human emotions and instead focused on players and how they reflect on their own interactions. The primary narrative hook revolved around the protagonists being forced into cooperation due to a catastrophic event, driving them to reevaluate their roles and the conflict. This allowed players to navigate their relationships organically rather than being spoon-fed choices, fostering emergent gameplay.

For the dual narrative to work, the story had to be morally ambiguous and grounded in relatable motives so that players empathise with their own character while doubting the other. Both species and by extension the players, must genuinely believe they are in the right based on their survival needs, past experiences, and values. As players journey together, they build a bond through shared challenges, but lingering doubts and tensions create a climactic ending where their final choices feel tense and meaningful. To ensure proper pacing and emotional impact, I outlined five key story beats (Setup, Event, Revelation, and Outcome) and the 4 endings to guide the narrative while leaving enough room for player agency. The ending includes a social deduction element where players attempt to convince each other of their intentions. This final interaction is pivotal, leaving players to reflect on their relationship and decisions throughout the game. **2.2 Narrative Structure** is what I provided to the narrative designer Mulkit and level designers, so that they can design the story and levels/progression around this, ensuring that the game has proper pacing and meets the required dual narrative vision.

Mechanics: I designed the spaceship, including the systems, minigames, repair mechanics, resource collection, upgrades and dual controls. The spaceship acts as a central hub for both players and the design thinking here was to create additional bonding moments outside the main narrative. I also designed the player communication mechanics to target the narrative

themes of misunderstanding and overcoming differences. I designed a distorted voice chat system to mimic language barriers. Players could convey urgency and emotions but cannot communicate complex ideas. This encouraged the use of non-verbal gestures and emergent communication styles. I also incorporated a limited telepathy resource to enable brief moments of clear communication. This resource introduced strategic tension, as players needed to decide the most critical information to share with someone they couldn't fully trust. To preserve the dual narrative tension, I proposed restricting players from discussing events outside the in-game communication channels, reinforcing the themes of secrecy and mistrust.

The communication barriers created unique gameplay dynamics, where each group of players could develop their own methods of interaction. This tied directly to the multiple endings, where players' decisions—to lie, cooperate, or manipulate—shaped the outcome. The ambiguity of the endings emphasised moral dilemmas, forcing players to weigh self-interest against the greater good.

I proposed a nonlinear structure to enhance player agency. Players decide which planets to explore and how to allocate resources, creating opportunities for disagreement and negotiation. This flexibility mirrors real-world relationships, where trust and compromise are tested over time. Setting the game in a solar system tied the narrative to the "Beneath the Surface" theme, while offering diverse environments for exploration. I also came up with the ideas for secondary mechanics.

ALVARO GOMEZ PEREZ

This report summarizes the progress made in the design of our video game project. My contribution to the team was the designing of the progression, character abilities and upgrades, traversal mechanics, the designing of the planetary system, the designing of the puzzle structure, and the audio design.

We went for this kind of game focused on a miscommunication mechanic after exploring ideas like a 'mystery-solving' video game. Finally, Nico came up with the idea of a 'sci-fi' cooperative game focused on these two characters and how we can communicate non-verbally and trust other players.

Traversal mechanics and Progression

Movement should be a key element in this game. I designed how these players would move through it. I thought of using jetpacks for reaching higher levels, also adding a 'booster' mechanic to it so players would see how interacting with the other player would be beneficial and giving it a downside to this mechanic. I limited the movement of the player, making them dependent on fuels. The jetpacks depended on the weight of each character so we could find different types of designing puzzles. After designing the character abilities, I thought of creating an actual physical 'Symbiochord area' so the players are tied and making the puzzle resolution more difficult.

Planetary System

While working on the gravity differences I designed the planetary system. I did some research on how these are structured, and the relationship between their gravity, size, mass, and their

distance to the sun. I thought of five planets and giving them different characteristics and something that would make the player revisit them after one exploration cycle like in the 'water-moon' planet. Moreover, I had to come up with challenges, like the one for the jetpack mechanic by adding lava or making the surface dangerous with sandstorms.

Characters Abilities

I took the narrative design made by Mulkit for making these. Firstly, Drayk was the only one that could interact with its environment, while Eiva was focused more on the acquisition of knowledge. We changed it because it would have been imbalanced. For Drayk I thought of making him build bridges, open paths, etc., and Eiva about Telekinesis and moving objects. To cooperate I thought of limiting their movement while they're interacting.

Upgrades

These were for unlocking better resources and elements of the game such as weapons, ways of communication, ship reparation and insight for a better understanding of the world. These last one aspect is written in an ancient language that the players must try to understand to get this information.

Audio Design

In terms of the sounds, I wanted to stick with the realistic approach I had during the creation of the planetary system. I think it would be the best experience for this kind of game with a 'sci-fi' approach. In terms of the music, it represents the ambience the players are in for better immersion.

LAKSHYA TYAGI

My primary focus was to develop a prototype that aligned with the design goals and narrative outlined in the GDD. With limited time to work on the project and sufficient team members focusing on the document and research, I took responsibility for creating a functional prototype in Unity. Sarang assisted me in this endeavour.



The prototype demonstrates core functionalities, including character movement, space travel using the spaceship, and basic pickup mechanics. These features provide a foundation to validate the game's core mechanics and progression systems. While the scope of the prototype is limited due to time constraints and the complexity of implementing advanced mechanics, it effectively showcases the game's potential and serves as a stepping stone for further development.

I initially proposed a concept for a completely different game, which was later scrapped as our collective goals evolved. Once the team decided on the vision for *Shattered Skies*, I focused on ensuring that my contributions complemented the overall direction of the project. To this end, I wrote the prototype description section, detailing the prototype's purpose and limitations, while highlighting its alignment with the core mechanics and vision outlined in the GDD.

Additionally, I worked on designing the monetization and economy systems for the game. My approach was to create an ethical, player-focused framework that enhances engagement without compromising gameplay integrity. The system was carefully designed to avoid pay-to-win mechanics or gambling elements, instead emphasizing cosmetic enhancements and rewarding exploration.

Beyond the prototype and monetization system, I contributed to the GDD by formatting the document for consistency and readability, ensuring a professional and cohesive presentation. I also gathered references and inspiration from relevant games to enrich the ludography section, providing context and grounding for our design decisions. This research offered valuable insights into proven mechanics and themes, further strengthening the game's foundation.

MULKIT PAREEK

Visual Language

The art direction in this game is totally immersive. The idea of a dark, star-filled emptiness interrupted by the ruins of exploded planets yields a breathtaking "archipelago" of debris. The broken landscape serves as the backdrop for a post-apocalyptic galaxy, where scraps of civilization hang on.

Taking its aesthetic from cyberpunk, space punk, and biopunk styles, the art style of the game combines futuristic technology with biological material in a harmonious way. You would see streamlined, metallic spacecraft alongside pulsing alien vegetation and animals.

The colour scheme is desaturated and shifts from the metallic, cold tones of technology to the bright, glowing hues of alien life. The world becomes beautiful and diverse and as engaging as it is disturbing. Cel Shaded properties of game give it an aura of mystery and adventure.



Game Narrative

Before deciding the narrative, we had an objective of making the game on theme of “Beneath the surface”. We figured out multiple ideas but for getting on the story and lore we had multiple discussion around the mechanism of communication. Nico B came up with this unique concept which everyone in my group found interesting and untouched. So, we decided to make a unique narrative for a unique mechanism our game is going to be based on. "Shatter Skies" follows two unlikely protagonists, Daryk and Aevi, who are physically linked by a parasitic symbiochord, compelling them to work together despite their mutual suspicion and extremely different natures.

The Shatterstorm, the cataclysm that ravaged the world, has traumatized them badly and rendered them suspicious of one another. But survival depends on their capacity to put aside their animosity and collaborate.

Alvaro helped with the abilities of both the players and deciding the use of spaceship and planet system. In Shatter skies players will encounter challenges that will test them to decipher mysterious clues, navigate dangerous landscapes, and eventually, learn to trust each other. "Shatter Skies" explores the intricacies of communication, the importance of empathy, and the unexpected strength that can be found in imperfect alliances.

Game World

For our game I tried to put a grand structure for players to travel and explore. With mechanics designer Nico and Alvaro, I figured what kind of reasons we can give the player to travel than we came to a same page that we designed the Shatterstorm world is a grim testament to the fragility of civilization, its shattered planets and decaying ruins hanging suspended in an unbalanced dance. We imagined a sky choked with debris, where colossal chunks of rock that were once part of a vibrant world now drift amongst the stars. Below, alien ecosystems have reclaimed the wreckage, thriving in the face of chaos. Some bioluminescent flora lights the darkness, while bizarre creatures, born of this shattered world, roam and rule the fractured terrain. The air is thick with ozone, humming with unseen energies, still echoing with the cataclysm that rent everything asunder. It's a world of stunning beauty and harrowing peril-one that pits survivors against the cruel hand of creation, with ingenuity, wit, and even an uneasy alliance being the only bridges to survival.

Characters and Parasite

With story of this style, we have chosen our characters to have a mega conflict in between of each other but we realised that it may make game narrative black and white at different stages. So, we made a little bit of adjustment in the motives of both of main characters. Both characters possess unique abilities that complement each other, creating a dynamic balance in gameplay. When one character faces a disadvantage or struggles in a specific situation, the other's strengths provide an opportunity to compensate and overcome the challenge. This synergy not only ensures balance but also encourages reliance on each other to progress through the game, fostering teamwork and strategic collaboration.

Drayk is a grizzled, muscular man, the definition of a fighter within his militaristic culture. He sees the galaxy as one grand, cold battlefield-a place where the survivors will be those with the greatest will to live and survive. He has never believed in any form of diplomacy but rather direct action; trickery, according to him, is weakness.

Aevi, on the other hand, is a brilliant scientist of the Tethran race, known for their intellect and technological prowess. Her people value innovation and strategy over brute force, and she mirrors these ideals with her problem-solving abilities. Driven by a belief in reason over violence.

Their fates intertwine when the ancient parasite, the Symbiochord, binds them together. This alien entity enforces their cooperation, rewarding unity with strength but punishing conflict with pain. In the Symbiochord, Drayk and Aevi will have to face their biases, navigate moral

dilemmas, and travel down the fragile line that separates survival from coexistence, unravelling truths that may change their species forever.

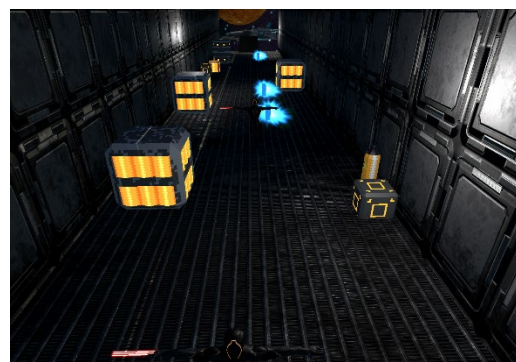
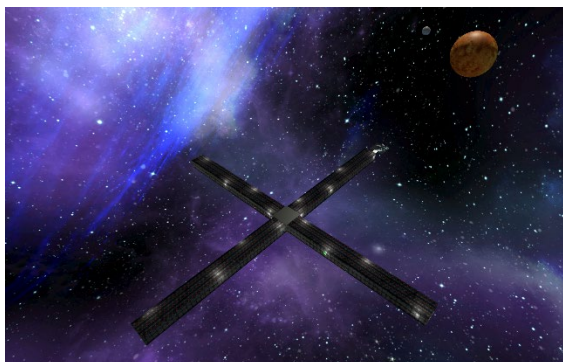
We are working towards a well-designed game, balancing each aspect chosen for the game. All this would not have been possible without the great work my team showed, not only in their respective roles but also in coming forward with fantastic ideas whenever needed. Their timely feedback has played a key role in shaping the story, art, game world, and characters. While this was to go further into the gameplay and prototype, in the end, we were only able to show the journey of the spaceship through the galaxy. Be that as it may, this has been one gratifying experience in collaboration.

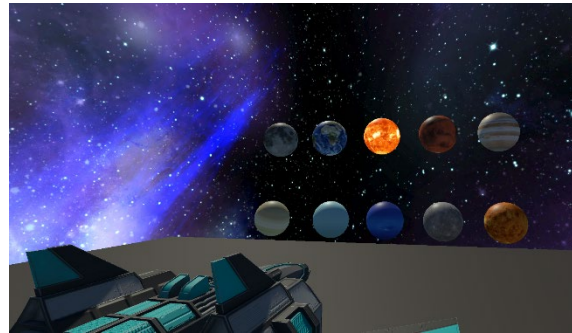
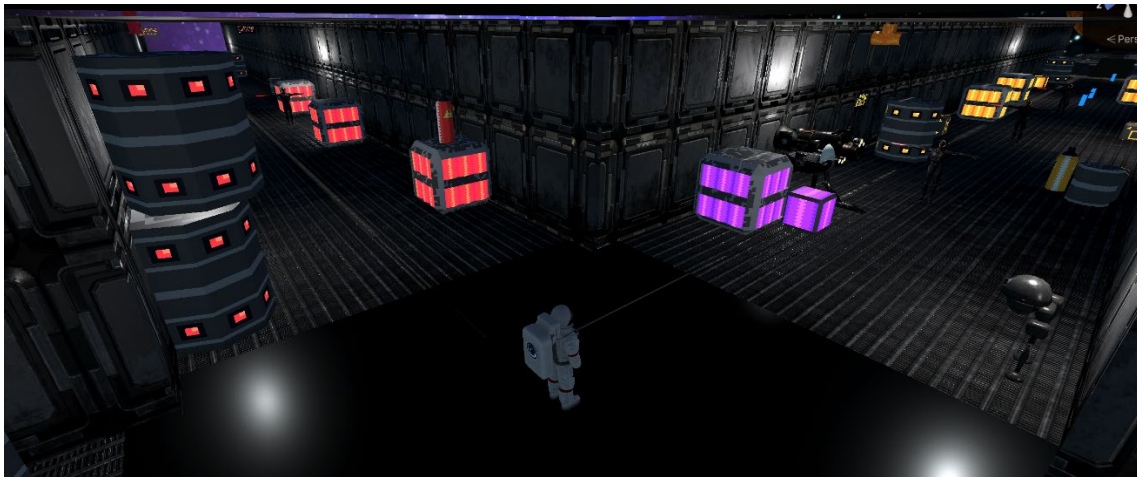
NAVYUG KADAM

My contribution has been mainly backstage support to the core development team. Various jobs I have done include administrative work like keeping the documents in order, arranging meetings, and ensuring that there is proper communication among the project team members. By effectively handling these supporting jobs, I am able to create a more focused and organized work atmosphere for everyone involved in this project. This backstage support was done to smooth out probable upheavals and let the creative and technical staff focus all their efforts on high-order areas of project formation.

Looking back on my performed role, I came to understand that in a project, especially all backstage operations are important. The experience for me was quite revealing; it showed me how much coordination and support was needed behind the scenes to move the project forward. Although my contribution did not result in the development of any creative or technical deliverables, the experience indeed reinforced my understanding of how organically fundamental organizational functions are to the bigger scheme of project success. I have learned to appreciate more the subtleties of project dynamics and the inexorably important function that support roles provide in reaching those common objectives. Not only did the project enlighten me to team operability-wide-eyed as it were-but it indeed enriched my project coordination and support skills, precious in any teamwork enterprise.

SARANG NIKHADE





Introduction

As a Level Designer for this project, my primary responsibility was to create immersive, engaging, and dynamic environments that aligned seamlessly with the game's narrative and mechanics. Each level was carefully designed to complement the overarching story while introducing fresh gameplay challenges, ensuring players remain captivated throughout their journey. Beyond level design, I contributed to key development aspects, including the **Spaceship Movement** system with a focus on the **Teleportation Mechanic**, and **Enemy AI Development** using state machines and Unity's **NavMesh** system.

Level Design Contributions

In designing the levels, my approach centred on balancing visual appeal with gameplay functionality. Levels like **Pyroterra** and **Cryonix** were created to support the game's narrative through environmental storytelling, showcasing pivotal moments such as uncovering ancient civilizations or surviving environmental hazards. Each level featured unique gameplay elements, from solving lava puzzles in Pyroterra to mastering stealth in Remnara. A key focus was fostering cooperation between the asymmetric roles of players, with challenges that required teamwork and leveraged their unique abilities. To enhance engagement, I integrated hidden pathways, collectibles, and lore items that rewarded exploration and encouraged replayability.

One of the main challenges was balancing level complexity to cater to players of varying skill levels. For instance, Cryonix required precise traversal on slippery surfaces, while Dunestorm demanded adaptability amidst shifting sands and sandstorms. Early playtesting sessions highlighted areas that needed refinement, such as the crumbling platform mechanics in Pyroterra and the decryption puzzles in Dunestorm. Through iterative adjustments based on player feedback, these elements were fine-tuned to strike a balance between challenge and enjoyment.

Spaceship Movement Development

In addition to level design, I contributed to the **Spaceship Movement** system, specifically focusing on the **Teleportation Mechanic**. This feature allowed players to navigate large areas efficiently, adding a strategic element to exploration and hazard avoidance. The teleportation system enabled players to select precise destinations using an aiming mechanism, with visual markers providing clear feedback for valid teleportation zones. Immersive visual and audio feedback, such as fade-in/fade-out animations and teleportation sounds, were implemented to enhance the player experience. To introduce a layer of strategy, the mechanic was tied to an **energy cost system**, requiring players to manage resources effectively.

Developing the teleportation system came with its challenges. Ensuring smooth synchronization in multiplayer sessions required careful attention to network code, while maintaining immersion demanded seamless transitions between teleportation actions. Despite these hurdles, the feature was well-received during playtesting, with players appreciating its strategic utility in evading hazards like sandstorms or hostile wildlife.

Enemy AI Development

Another significant contribution I made was developing **Enemy AI** using **state machines** and Unity's **NavMesh** system to create intelligent and dynamic enemy behaviour. This was particularly important in levels like **Remnara**, where players encounter hostile wildlife that reacts to their actions and environment.

1. State Machines:

- Implemented state machines to define enemy behaviour, including **Idle**, **Patrol**, **Chase**, and **Attack** states.
- Transition logic ensured smooth and logical shifts between states based on triggers like player proximity or line of sight. For instance, enemies in **Remnara** would transition from **Idle** to **Chase** when players entered their detection radius.
- Added fallback states, such as **Flee**, for enemies to retreat when low on health, adding depth to their behaviour.

2. NavMesh Integration:

- Integrated Unity's **NavMesh** system to allow enemies to navigate complex environments seamlessly.

- Configured **NavMesh Obstacles** for dynamic level elements, ensuring enemies adapted to changing terrain, such as collapsing platforms in **Pyroterra** or dense foliage in **Remnara**.
- Enabled **NavMesh OffMesh Links** for vertical navigation, allowing enemies to pursue players across ledges and elevated paths.

3. Testing and Refinements:

- Regular playtesting was conducted to ensure enemy behaviours felt natural and challenging without being overwhelming.
- Adjusted parameters such as detection radius, patrol speed, and attack cooldowns to maintain balance across levels.

The result was an AI system that felt responsive and intelligent, enhancing immersion and engagement for players.

Key Challenges and Solutions

Throughout the project, several challenges arose. One major hurdle was **balancing difficulty**, particularly in creating levels and AI behaviour that were accessible yet engaging for players of varying skill levels. Regular playtesting and feedback loops were invaluable in identifying and addressing such issues. Another challenge was **ensuring visual and gameplay diversity** across levels to keep the experience fresh and exciting. For example, the fiery tones and intense hazards of Pyroterra provided a stark contrast to the serene, bioluminescent depths of Tidalor.

On the technical side, implementing **state machines** and integrating AI with **NavMesh** required careful planning to avoid conflicts or erratic behaviour. Collaborative problem-solving and iterative design were key to ensuring AI behaviours were consistent and enhanced gameplay.

Lessons Learned

One of the key takeaways from this experience was the importance of collaboration. Working closely with the narrative, mechanics, and programming teams ensured that the levels, AI systems, and gameplay mechanics aligned cohesively. The iterative design process proved essential, as early prototypes often revealed issues that required refinement. Balancing the creative and technical aspects of the teleportation system and enemy AI was another significant learning experience, highlighting the need for functionality and player experience to coexist harmoniously.

Future Improvements

Looking ahead, there are several opportunities for improvement. In level design, incorporating more dynamic environmental interactions, such as player-triggered events that alter layouts or unlock new pathways, could enhance engagement. Adding optional objectives or side quests would increase replayability and give players greater agency. For the teleportation mechanic, introducing skill upgrades, such as reduced energy cost or extended range, could deepen its

integration into player progression. Expanding its role in environmental puzzles, such as teleporting across chasms or activating distant mechanisms, would also elevate its impact on gameplay.

For **Enemy AI**, I plan to expand the state machine functionality to include more complex behaviours, such as group coordination among enemies or context-sensitive actions based on environmental factors. Additional features like adaptive difficulty, where AI behaviours change based on player performance, could further enhance the challenge and replayability.

Conclusion

This project has been an invaluable opportunity to develop both creative and technical skills. As a Level Designer, it was incredibly rewarding to create environments that immerse players while complementing the game's narrative and mechanics. My contributions to the teleportation mechanic and enemy AI development provided insights into designing functional and intuitive systems that elevate gameplay. These experiences have strengthened my ability to deliver cohesive, engaging gaming experiences that balance innovation with accessibility.

CHAPTER 13: RESOURCES

1. Astronaut from Sketchfab

<https://sketchfab.com/3d-models/astronaut-rigged-and-animated-f45039084a674080b42f5e171fd4f04c>

2. Cyber Punk Girl & Vehicle

<https://assetstore.unity.com/packages/3d/characters/humanoids/cyber-punk-girl-vehicle-102627>

3. Deep Space Skybox Pack

<https://assetstore.unity.com/packages/2d/textures-materials/deep-space-skybox-pack-11056>

4. Fuel Tank 10L

<https://assetstore.unity.com/packages/3d/props/fuel-tank-10l-230694>

5. Legacy Particle Pack

<https://assetstore.unity.com/packages/vfx/particles/legacy-particle-pack-73777>

6. Particle Pack

<https://assetstore.unity.com/packages/vfx/particles/particle-pack-127325>

7. Starter Assets – Third Person controller package

<https://assetstore.unity.com/packages/essentials/starter-assets-thirdperson-updates-in-new-charactercontroller-pa-196526>

8. Toon Crystals Pack

<https://assetstore.unity.com/packages/3d/props/toon-crystals-pack-66182>

9. High Definition Subway entrance

<https://www.turbosquid.com/3d-models/high-definition-subway-entrance-432822>

10. Cyber Punk Girl & Vehicle

<https://assetstore.unity.com/packages/3d/characters/humanoids/cyber-punk-girl-vehicle-102627>

11. Spaceship Free low-poly 3D model

<https://www.cgtrader.com/free-3d-models/space/spaceship/spaceship-77a0b3a1-c2ba-45c5-bf72-545658bccc3a>

12. Photorealistic Solar System Free low-poly 3D model

<https://www.cgtrader.com/free-3d-models/space/planet/photorealistic-solar-system-51d160ad-7a31-4f9c-adbd-91e5cb11848b>

13. Alien NPC

<https://www.mixamo.com/>

14. 3D Sci Fi Props

<https://assetstore.unity.com/packages/3d/props/3d-sprite-sci-fi-props-246349>

15. Steampunk UI

<https://assetstore.unity.com/packages/2d/gui/icons/steampunkui-238976>

CHAPTER 14: REFERENCES AND LUDOGRAPHY

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