

Vault of the Elements: Dragon's Legacy

3D Adventure Puzzle Game

Gradinariu Rares-Ioan

Mihai Andrei Alexandru

Pavaloiu Bianca-Anastasia

Rizan Gabriel Adelin

1.Introduction

2.Game Overview

- 2.1. Game Concept
- 2.2. Genre
- 2.3. Target Audience
- 2.4. Game Flow Summary
- 2.5. Look and Feel

3.Gameplay & Mechanics

3.1. Gameplay

- 3.1.1. Game Progression
- 3.1.2. Mission/Challenge Structure
- 3.1.3. Puzzle Structure
- 3.1.4. Objectives
- 3.1.5. Play Flow

3.2. Mechanics

- 3.2.1. Physics
- 3.2.2. Movement
- 3.2.3. Actions
- 3.2.4. Combat
- 3.3. Game Options
- 3.4. Replaying and Saving
- 3.5. Cheats and Easter Eggs

4.Story, Setting, and Character

5.Levels

- 5.0. Hub area
- 5.1. Fire Level Setting - The Fiery Forges
- 5.2. Water Level Setting - The Submerged Pumping Station
- 5.3. Earth Level Setting - The Crystal Mineshaft
- 5.4. Air Level Setting - The Skies of Serenity
- 5.5. Dragon Fight Puzzle - The Forge Showdown

6.Interface

- 6.1. Visual System
- 6.2. Camera Model
- 6.3. Control System
- 6.4. Audio, Music, Sound Effects

7.Technical

- 7.1. Target Hardware
- 7.2. Game Engine

8.Game Art

1.Introduction



2.Game Overview

2.1. Game Concept:

The game is a 3D adventure puzzle game with platforming elements. It revolves around the revenge story of Bombur Fireforge, a dwarf, as he embarks on a quest to construct a powerful weapon capable of defeating the mighty dragon that annihilated his people.

2.2. Genre:

The game falls under the fantasy adventure and puzzle genre with retro game influences.

2.3. Target Audience:

The target audience for the game includes fantasy enthusiasts who enjoy immersive storytelling and puzzle-solving in a 3D world. Additionally, retro game lovers who appreciate nostalgic elements in modern gameplay.

2.4. Game Flow Summary:

The player takes on the role of Bombur Fireforge and navigates a 3D world filled with puzzles, challenges, and platforming sections.

The primary goal is to collect the four elemental components necessary to craft the weapon to defeat the dragon.

The player progresses by solving puzzles, overcoming obstacles, and exploring the game world.

The framing interface includes a user-friendly heads-up display (HUD) that provides relevant information, such as inventory, quest objectives, and character stats.

The game follows a linear story progression with various quests and challenges along the way.

As Bombur acquires each elemental component, he becomes more powerful, unlocking new abilities and tools to aid in his quest.

2.5. Look and Feel:

The game boasts a retro blocky feel, 3D world with an emphasis on fantasy aesthetics, featuring fun environments and fantastical creatures.

The visual style incorporates both classic fantasy elements and a hint of retro charm, paying homage to classic adventure games.

The game's look and feel capture the sense of wonder and exploration, providing players with a compelling and immersive experience.

The art direction includes a mix of vibrant colors, dark and mysterious dungeons, and awe-inspiring landscapes, adding depth to the game's atmosphere.

This combination of 3D adventure, puzzle-solving, and retro game influences should provide an engaging and nostalgic experience for your target audience while delivering an exciting revenge story within a rich and visually appealing fantasy world.

3.Gameplay & Mechanics

3.1 Gameplay

3.1.1. Game Progression:

The game follows a linear progression, where players move through four distinct areas, each associated with one of the four elements: Earth, Fire, Water, and Air.

To access each area, the player must acquire the corresponding element, typically by completing a mission or puzzle related to that element.

3.1.2. Mission/Challenge Structure:

The game features a structured mission and challenge system.

Each area presents unique challenges and missions related to the respective element. These challenges can range from environmental puzzles to enemy encounters.

Completing these missions rewards the player with the elemental components necessary for crafting the final weapon.

3.1.3. Puzzle Structure:

Puzzles are integral to the gameplay, with each area featuring element-specific puzzles.

The puzzles are designed to test the player's problem-solving abilities and often require creative use of the acquired elements.

Solving these puzzles is key to progressing through the game.

3.1.4. Objectives:

The primary objective of the game is to gather the four elemental components necessary to craft the final weapon.

Secondary objectives include uncovering the lore of Bombur's people and the history of the dragon, providing depth to the game world.

3.1.5. Play Flow:

The player starts in a central hub and gains access to new areas by acquiring elemental abilities.

A minecart system acts as a transportation method, taking the player from one area to the next.

In each area, the player encounters challenges, puzzles, and enemies that must be overcome.

After completing the element-specific mission in an area, the player acquires that element.

With each element acquired, Bombur gains new abilities and tools, allowing him to access new areas and solve more complex puzzles.

The ultimate goal is to gather all four elements and craft the weapon needed to confront and defeat the dragon.

The game's design ensures accessibility for all players but also offers opportunities for skilled players to master it for speedrunning, thanks to its intricate puzzles and challenges.

3.2 Mechanics

3.2.1 Physics:

The game adheres to real-world physics principles, emphasizing 3D movement, gravity, and object interactions.

3.2.2 Movement:

Players control Bombur's movement using the WASD keys.

Jumping is executed with the spacebar.

To traverse the environment, players can walk or run (holding the shift key).

3.2.3 Actions:

Text-based communication is used for interactions with NPCs and the environment.

The "E" action button allows players to interact with objects in the game world.

3.2.4 Combat:

Combat is minimal to nonexistent in the game, which is primarily puzzle-based, with limited or no conflict scenarios.

3.3. Game Options:

Players have the option to toggle sound on or off.

They can switch between Fullscreen and windowed modes.

3.4. Replaying and Saving (Possible Future Feature):

The game may incorporate a saving and replaying system in future versions.

3.5. Cheats and Easter Eggs (To Be Added):

A console for cheats and hidden easter eggs is planned for implementation in future updates.

4. Story, Setting and Character

In the realm of epic quests and adventure, a dwarf by the name of Bombur Fireforge emerges as a resolute and sturdy figure. With a rugged visage, a stature that's on the shorter side, and a chestnut beard adorned with gleaming metal beads and charms, Bombur perfectly embodies the essence of his people. Clad in reliable leather armor and a forest-green tunic, he wields a formidable pickaxe, the tool of choice as he descends into the profound depths of the mountain. His steely gray eyes reflect the wisdom and unyielding determination that drives him. Today, Bombur begins his journey into the heart of the earth, intent on unearthing precious treasures and unlocking ancient secrets, ready to embark on an RPG-style adventure.

As Bombur continued to delve into the depths, his pickaxe struck upon an unexpected discovery—an enormous gem, radiant and pulsating with a captivating light. He had unearthed the fabled "Heart of the Mountain," a gem said to contain the very essence of the four elements: water, fire, earth, and air. It was the seed from which the mountain's power and ancient magic had originated.

However, this monumental find was not without consequences. As the gem shimmered with unearthly brilliance, it caught the attention of a fearless dragon, a colossal beast of obsidian scales, wreathed in flickering flames, and possessing eyes that blazed like infernos. The dragon's roar shattered the tranquility of the caverns, and the peaceful dwarf village that thrived in the mountain's shadow was suddenly plunged into chaos.

With a thunderous assault, the dragon attacked, setting fire to homes, casting fear into the hearts of Bombur's kin, and leaving him as the last survivor. In a desperate bid for survival, Bombur sought refuge in a hidden vault, a sacred chamber where the ancestors had stored their most prized possessions.

Now, with his village laid to waste and the memory of his kin etched into his heart, Bombur is on a quest to find clues that will lead him to a weapon capable of vanquishing the fearsome dragon. As he unravels the ancient scrolls and studies the inscriptions of his forebears, he stumbles upon a cryptic prophecy that hints at a solution. The answer lies within the broken Heart of the Mountain, where the four elements have manifested themselves within the depths of the mine.

Determined and resolute, Bombur sets forth into the uncharted territories of the mountain's interior, where he must navigate treacherous caverns, face elemental trials, and confront his greatest fears to reunite the fractured Heart of the Mountain and reclaim the power that lies within. The fate of his people and the challenge of defeating the dragon await him in the depths of the earth, as Bombur Fireforge embarks on the most perilous RPG-style adventure of his life.

5. Levels

5.0 Hub area

The Elemental Forge Vault serves as the central hub for the game. Located deep within the game world, this vault houses the Elemental Forge, where players come to craft the final weapon necessary to defeat the dragon. After completing each level, the forge updates to incorporate the new elements gathered, and the final step involves crafting the weapon with a series of "Non so quick" time events.



Key Features:

1. **Central Hub:** The Elemental Forge Vault is the heart of the game, a massive, awe-inspiring chamber housing the Elemental Forge at its core. The vault features grandiose architecture, elemental motifs, and distinct sections dedicated to each element.
2. **Elemental Sections:** As players progress through the game and gather the four elemental components (Fire, Water, Earth, and Air), the corresponding sections of the vault update and evolve to represent each element's characteristics and aesthetics.
3. **Crafting Mechanism:** The Elemental Forge itself is a masterpiece of art and engineering. It contains intricate machinery and tools for crafting the final weapon. Players will interact with the forge to combine the gathered elemental components.
4. **"Not So Quick" Time Events:** The final step of crafting the weapon involves a series of challenging "Not So Quick" time events, where players must execute precise actions with speed and accuracy. These events add tension and excitement to the crafting process.
5. **Audio Atmosphere:** The sounds of clinking metal, the hum of machinery, and the intensity of the "Not So Quick" time events create an immersive audio experience that complements the hub's epic scale.

Objective:

The Elemental Forge Vault is the central hub where players return after completing each level. Here, they incorporate the new elemental components into the Elemental Forge. The final step involves crafting the weapon to confront the dragon, and this crafting process includes a series of "Not So Quick" time events. Players must perform these actions with precision and speed to complete the weapon successfully.

5.1 Fire Level Setting - The Fiery Forges:

In the Fire Level of the game, players find themselves deep within a network of caves known as "The Fiery Forges." This elemental cave system is a treacherous and challenging environment, filled with intense heat, molten lava, and intricate puzzles centered around fire. The primary objective of this area is to light up all the forges while dodging deadly obstacles such as lava flows and fire-breathing statues.



Key Features:

1. **Volcanic Caverns:** The Fiery Forges are nestled within a sprawling network of volcanic caverns. The cave walls are composed of rugged, blackened rock formations, and the entire place exudes an otherworldly, fiery glow. The volcanic caverns offer a stark contrast to the dark cave walls, creating a dramatic visual effect.
2. **Forged Puzzle Chambers:** Deep within the cave system are massive, ancient forge structures, hidden within chambers of molten rock and magma. These chambers house intricate puzzles that players must solve to light up the forges. The forges are suspended above lava pools, adding to the danger and complexity.
3. **Lava Flows and Heat Hazards:** Players will encounter treacherous terrain with flowing lava and scorching heat hazards. The threat of being consumed by the molten rivers and the intense heat further adds to the challenge of lighting up the forges.
4. **Audio Atmosphere:** The sound of flowing lava, crackling fires, and the rumbling of volcanic activity creates an immersive audio experience, adding to the intense and hazardous atmosphere of the fiery cave system.

Objective:

The main objective in this area is to navigate the perilous cave system, solve intricate puzzles associated with the forges, and ultimately light up all the forges hidden deep within the volcanic caverns while avoiding deadly obstacles.



5.2 Water Level Setting - The Submerged Pumping Station:

In the Water Level of the game, players will explore the "Submerged Pumping Station," an intricate underwater facility designed to control the flow of water and maintain the delicate balance of the aquatic ecosystem. The central puzzle of this area is to repair and reconfigure the water pipes, ensuring the smooth flow of water to reach the main.



Key Features:

Submerged Facility: The pumping station is a vast, submerged complex consisting of chambers, tunnels, and pipes, all hidden beneath the depths of an expansive underwater world. The architecture features a blend of industrial and aquatic design elements.

Transparent Pipes: Glass pipes are a prominent feature of the facility, allowing players to see the flow of water as they navigate through the intricate network of pipes and chambers.

Rotating Pipe Puzzles: The central mechanic of the level involves solving puzzles by rotating and connecting the pipes to direct the flow of water. Players must strategically manipulate the pipe systems to ensure water reaches the main chamber.

Crab Boss - King Crabulous: Players will encounter King Crabulous, a colossal crab boss, hidden within the pumping station. To defeat King Crabulous, players must dodge its claws and rotate a large pipe three times to disrupt its lair. Crabulous includes a fun and challenging puzzle sequence while the iconic "Crab Rave" tune plays in the background.

Audio Ambiance: The sound of underwater currents and the subtle hum of machinery creates an immersive audio experience, enhancing the underwater atmosphere.

Objective:

The primary objective in this area is to navigate the submerged pumping station, repair the pipe systems, and ensure the uninterrupted flow of water to the main chamber where the forge is located. Players must strategically manipulate the glass pipes to overcome obstacles and redirect water flow.



5.3 Earth Level Setting - The Crystal Mineshaft:

In the Earth Level of the game, players find themselves at the entrance of the intricate "Crystal Mineshaft," an underground labyrinth filled with valuable gemstones, minerals, and ores. To navigate the maze and locate the metal infused with the Earth element, players must solve a riddle that guides them to follow the green crystals, unlocking the path to their objective.



Key Features:

1. Subterranean Labyrinth: The Crystal Mineshaft is a sprawling, underground labyrinth with twisting tunnels, chambers, and glistening crystals that create a visually captivating environment.
2. Gemstone-Laden Pathways: Players will traverse pathways adorned with valuable gemstones, ores, and the occasional green crystal. These green crystals hold the key to progressing through the maze.
3. Mining Tools: Players may find various mining tools, such as pickaxes and drills, which can be used to interact with the environment, uncover hidden passages, and solve puzzles.
4. Earth-Infused Metal: The central objective is to locate the metal infused with the Earth element, which is concealed deep within the labyrinth. This metal is a vital component for crafting the final weapon needed to confront the dragon.
5. Riddle Challenge: At the start of the maze, players encounter a riddle that, once solved, instructs them to "follow the green crystals." This riddle is the key to successfully navigating the maze.
6. Audio Atmosphere: The sound of echoing footsteps in the underground tunnels, the shimmering of crystals, and the rumble of rocks contribute to an immersive audio experience that complements the underground setting.

Objective:

The primary objective in this area is to explore the intricate Crystal Mineshaft, discover the metal infused with the Earth element, and use it to craft the weapon required to confront the dragon. To achieve this, players must solve the riddle at the start of the maze, which guides them to "follow the green crystals." These green crystals serve as beacons to navigate the labyrinth, find their way through the maze, and uncover the precious Earth-infused metal. This Earth Level presents a captivating underground world, emphasizing exploration, puzzle-solving, and the quest for elemental power, without the presence of crystal guardians.

5.4 Air Level Setting - The Skies of Serenity:

In the Air Level of the game, players are transported to the ethereal and breathtaking "Skies of Serenity." To acquire the ancient fan, a vital component infused with the Air element, players must press buttons in a specific order to yodel a soothing tune. This yodeling mechanic is necessary to calm down a raging wind current or storm, allowing them to traverse a delicate wire bridge and secure the fan.



Key Features:

1. **Aerial Expanse:** The Skies of Serenity are a sprawling, ethereal expanse where players find themselves suspended high in the air. The sky is painted with vibrant colors, and players navigate between floating islands and platforms.
2. **Wire Bridge Challenge:** A key part of the level involves traversing a wire bridge that spans between two distant points in the sky. This bridge is a delicate structure that sways with the wind, adding an element of challenge to the level.
3. **Ancient Fan:** The primary objective is to obtain the ancient fan, which harnesses the power of the Air element. This fan is required for crafting the final weapon to confront the dragon.
4. **Yodeling Mechanic:** To calm down a turbulent wind current or storm and stabilize the wire bridge, players must press buttons in a specific order to create a yodeling tune. The yodeling mechanic allows them to manipulate the wind and create a path forward.
5. **Audio Ambiance:** The serene sounds of the sky, gentle breezes, and the player's yodeling create an immersive audio atmosphere that enhances the ethereal setting.

Objective:

The main objective in this area is to explore the breathtaking Skies of Serenity, press buttons in a specific order to yodel a soothing tune, calm down a raging wind current or storm, traverse the delicate wire bridge, and secure the ancient fan infused with the Air element. Players must use their yodeling abilities to manipulate the wind and create a safe passage.

5.4 Dragon Fight Puzzle - The Forge Showdown:

In the climactic battle, players confront the formidable dragon inside the Elemental Forge itself. As the dragon's head emerges from the door of the vault, its arms and legs burst forth from other entrances. The dragon strikes in a repetitive pattern, and players must dodge its attacks while completing a series of hits on its limbs and head to secure victory. Every time the dragon makes contact, players lose a heart.



Key Features:

1. **Forged Arena:** The epic showdown takes place within the Elemental Forge, adding an extra layer of intensity and drama to the battle. The forging equipment and machinery provide an awe-inspiring backdrop.
2. **Dynamic Entry:** The dragon makes a dynamic entry, with its head emerging from the vault door and its arms and legs bursting from other entrances. This adds to the epic scale and excitement of the battle.
3. **Repetitive Attacks:** The dragon follows a repetitive attack pattern, which players must learn and adapt to. These attacks include breath attacks, claws, and tail swipes.
4. **Dodging Mechanic:** Players must use their agility to dodge the dragon's attacks and avoid getting touched. Each time the dragon makes contact with the player, they lose a heart.
5. **Strategic Hits:** To defeat the dragon, players must strategically target and hit both of its legs, arms, and its head. This requires precise timing and accuracy.
6. **Health Management:** Players must carefully manage their health throughout the battle, as they lose hearts with each hit from the dragon. Using healing items or abilities is crucial to surviving the encounter.
7. **Audio Intensity:** The roar of the dragon, the clash of combat, and the intensity of the showdown create a thrilling and immersive audio experience that heightens the drama of the final battle.

Objective:

The objective in the dragon fight puzzle is to defeat the dragon by dodging its attacks, managing your health, and strategically hitting both of its legs, arms, and head. Players must learn the dragon's attack patterns and respond with precise timing. Every hit from the dragon costs a heart, making health management crucial. The climactic showdown inside the Elemental Forge is the culmination of the game's journey and provides an epic and challenging conclusion to the quest for elemental power.

6. Interface

6.1. Visual System:

- The game features a minimalist Heads-Up Display (HUD) that displays essential information to the player. This includes elements like the player's health (3 red hearts), elemental fragments acquired, and quest objectives.
- Menus are limited to a main menu, where players can start their journey, and access settings for sound.

6.2. Camera Model:

- The game employs a first camera model, allowing players to view the world from behind Bombur's shoulder.

6.3. Control System:

- Players control the game using a standard mouse and keyboard setup.
- Specific commands for controlling Bombur include movement (WASD keys), jumping, using elemental abilities (bound to hotkeys), interacting with objects or NPCs (e.g., the "E" key).
- The mouse is used for camera control, allowing players to look around and interact with objects or enemies in the game world.

6.4. Audio, Music, Sound Effects:

- The game features a basic audio system with a soundtrack that complements the game's fantasy and retro themes.
- The music sets the tone for different areas and adds to the overall atmosphere.
- Sound effects are used for actions like Bombur's movements, interactions, puzzle-solving, and combat.
- While the game's audio and sound effects are relatively simple, they enhance the player's immersion and contribute to the overall gaming experience.

7. Technical

7.1. Target Hardware:

The game is designed to run on a wide range of hardware, as it is relatively simple in terms of graphics and processing requirements.

It can be played on both desktop and laptop computers with varying specifications.

Compatibility should include systems with modest graphics cards and processors.

7.2. Game engine

Game Engine: The game is built using the OpenGL graphics API, which allows for cross-platform compatibility.

8.Game Art

8.1 Character Design:

Bombur Fierforge, the determined dwarf protagonist, is visually striking with traditional dwarf characteristics. The dragon antagonist is menacing and awe-inspiring. Various creatures and NPCs are designed to match the fantasy and retro themes.

8.2 Environmental Assets:

There are four elemental realms, each with a unique visual style. The environments are rich in detail, featuring puzzles, traps, and obstacles that are visually integrated into the world.

8.3 Items and Equipment:

Elemental abilities and the final crafted weapon are visually represented. Collectibles and power-ups fit seamlessly into the fantasy and retro aesthetics.

8.4 User Interface (UI):

The HUD elements are integrated into the game world, maintaining a cohesive style. Menus and buttons are user-friendly while reflecting the overall game aesthetics.