**Project Documentation Report: HollowFire - A Unity 2D Jump'n'Run Game**

**I. Overview:**

**A. Project Details:**

* **Project Name: HollowFire**
* **Type: 2D Jump'n'Run Unity Game**
* **Objective: Improve game development skills and Unity knowledge through experimentation.**

**B. Development Team:**

**Lead Developer: [Aasia Saeed Abbasi(025) and Khadija Haroon Qureshi(015)]**

**II. Storyline:**

**A. Setting:**

In the mystical realm of Elementara, where the elements come to life, a disturbance has upset the harmony between Fire and Water.

**B. Plot:**

As the chosen character, players must navigate through the enchanted forest, overcoming challenges, and restoring balance by mastering the art of transformation between Blaze (Fire) and Aqua (Water Drop). III. Characters:

**A. Blaze (Fire Character):**

**Description:**

* Agile and fiery character.
* Outfitted with fireball-shooting abilities.
* Can change size for strategic navigation.

**Abilities:**

Basic movement and jumping.

Fireball shooting for offense and puzzle-solving.

Size transformation for overcoming obstacles.

**B. Aqua (Water Drop Character):**

**Description:**

Fluid and nimble water drop.

Capable of rolling and traversing tight spaces.

Can change size for adaptability.

**Abilities:**

Movement and high jumps.

Rolling to navigate through narrow passages.

Size transformation for strategic navigation.

**IV. Features:**

**A. Movement and Jumping Mechanics:**

**Description:**

Fluid 2D character movement.

Responsive jumping mechanics.

Different movement attributes for Blaze and Aqua.

**B. Enemy Interactions:**

**Description:**

Elemental enemies with varied behaviors.

Combat interactions using fireballs.

Defeat mechanism for enemies and characters.

**C. Elemental Transformation:**

**Description:**

Blaze can transform into a smaller Fireball form.

Aqua can transform into a condensed Water Drop form.

Transformation aids in navigating specific challenges.

D. Size Manipulation:

Description:

Characters can change size dynamically.

Size adjustments for fitting through passages.

Strategic use in puzzle-solving.

E. Dynamic Obstacles:

Description:

Varied obstacles requiring unique character abilities.

Platform challenges, traps, and environmental puzzles.

Logical progression of difficulty.

F. Shooting Mechanism:

Description:

Blaze's fireball shooting mechanism.

Targeting system for engaging enemies.

Integration with puzzle elements.

**G. Death and Respawning:**

**Description:**

Characters face defeat from enemies or hazards.

Checkpoint system for fair respawning.

Balancing challenge and accessibility.

**V. Game Logic:**

**A. Player Input:**

**Description:**

Responsive keyboard or controller input for character control.

Jumping, movement, and size transformation mapped to intuitive controls.

**B. Character State Management:**

**Description:**

Blaze and Aqua have distinct states: normal, transformed, defeated.

Smooth transition between states based on player actions and game events.

**C. Enemy AI:**

**Description:**

Elemental enemies exhibit various behaviors (patrolling, chasing, etc.).

Responsive AI that reacts to the player's presence and actions.

D. Puzzle and Obstacle Logic:

Description:

Dynamic obstacle activation based on player proximity.

Puzzle elements that respond to character size and abilities.

**E. Game Progression:**

**Description:**

Linear level progression with increasing difficulty.

Unlocking new abilities and challenges as players advance.

**F. Combat Mechanics:**

**Description**:

Fireball collision detection and damage calculation.

Enemy and player health management.

Feedback mechanisms for successful attacks and defeats.

**G. Size Transformation Logic:**

**Description:**

Seamless size transformation with visual and audio feedback.

Size-dependent collision detection for character and environment interactions.

**VI. Conclusion:**

HollowFire not only offers an engaging narrative and diverse characters but also boasts a robust game logic system. The intricate balance between player input, character states, enemy AI, and puzzle mechanics creates a dynamic and immersive gameplay experience. As players delve into the enchanted forest, they will find themselves challenged by a meticulously crafted set of game mechanics that aim to entertain and educate, making this Unity 2D Jump'n'Run game a valuable tool for skill enhancement and knowledge exploration.