## **Project Design: Elemental Clash**

### **Lead Applicant Name: [Your Name]**

### **Project Name: *Elemental Clash***

### **Proposed Start Date: [Insert Start Date]**

### **Project Duration: 3-6 months**

### **Project Overview:**

*Elemental Clash* is a competitive card game built on the ICP blockchain, where players collect NFT-based elemental cards, engage in battles through random matchmaking, and trade these cards in a decentralized marketplace. The game leverages ICP’s unique features, including verifiable randomness for fair match pairing and transparent NFT-based card ownership. This project enhances the Internet Computer ecosystem by driving transaction volume and providing a scalable, decentralized gaming experience that rewards both strategic play and player engagement.

### **Grant Amount Requested: $25,000**

You will have three check-ins with the DFINITY Grants Committee:

* **Milestone 1:** 30-day check-in ($5,000 reward)
* **Milestone 2:** Midway through project development ($10,000 reward)
* **Milestone 3:** Final deliverable submission ($10,000 reward)

## **Milestone Plan:**

### **Milestone 1: Core Architecture and Smart Contract Setup (Month 1-2)**

#### **Goal: Develop the core architecture of *Elemental Clash* and deploy smart contracts for matchmaking, NFT card minting, and transactions.**

**Objectives and Deliverables:**

1. **Design Document of Game Architecture:**
   * Deliver a comprehensive design document outlining the entire game architecture. This includes the integration of canisters, smart contracts, the NFT marketplace, and how random match pairing will be handled using ICP’s verifiable randomness.
2. **Smart Contract Development:**
   * **Matchmaking Contract:** Develop the core contract that pairs players randomly based on verifiable randomness from ICP.
   * **NFT Card Minting Contract:** Create a smart contract to mint, transfer, and verify ownership of NFT cards.
   * **In-Game Transaction Contract:** Implement transaction handling for card exchanges and wagers, ensuring a transparent and secure system.
3. **Canister Development:**
   * Develop the backend using ICP canisters to handle player progression, game state, and card transactions. This will be the foundation for integrating the frontend and connecting with the smart contracts.

**Sprint Breakdown:**

* **Sprint 1 (Days 1-5):**Set up the project repository, establish the development environment, and start implementing the initial structure for smart contracts.
* **Sprint 2 (Days 6-15):**Develop the NFT card minting and matchmaking contracts, and set up basic interactions between the smart contracts and canisters.
* **Sprint 3 (Days 16-25):**Integrate canisters for game state management and player progression.
* **Sprint 4 (Days 26-30):**Test the matchmaking and card minting functions, ensuring that on-chain verifiable randomness works as intended.

**First Milestone Reward:** $5,000

### **Milestone 2: Frontend Integration and Marketplace Development (Month 2-4)**

#### **Goal: Build the game client and marketplace where users can trade NFT cards, view collections, and participate in matches.**

**Objectives and Deliverables:**

1. **Game Client Development (UI/UX):**
   * Develop a responsive user interface where players can:
     + View their card collection.
     + Engage in random battles.
     + Manage trades and purchases in the marketplace.
     + Participate in daily quests and tournaments.
2. **Marketplace Development:**
   * Create a decentralized marketplace for NFT card trading, powered by ICP tokens. The marketplace will feature verifiable random card packs, trading functions, and transaction history stored on-chain.
   * Implement functionality to buy, sell, or trade NFT cards securely using ICP tokens or in-game currency (Elemental Coins).
3. **Frontend and Smart Contract Integration:**
   * Integrate the frontend with backend smart contracts to allow seamless interaction for battles, card transfers, and marketplace transactions.
   * Ensure that all in-game actions (like card trading and match participation) are recorded immutably on the ICP blockchain.

**Sprint Breakdown:**

* **Sprint 1 (Days 1-10):**Develop the core game client interface and connect it with the player account system and card collection viewer.
* **Sprint 2 (Days 11-20):**Build the NFT marketplace interface, allowing users to buy, sell, and trade cards. Set up the card pack minting system.
* **Sprint 3 (Days 21-30):**Integrate all front-end elements with the backend contracts, ensuring a seamless flow from card acquisition to battle participation.

**Second Milestone Reward:** $10,000

### **Milestone 3: Tournament and Progression System (Month 4-6)**

#### **Goal: Implement progression features such as ranking systems, tournaments, and daily quests to engage players and sustain long-term interest.**

**Objectives and Deliverables:**

1. **Progression and Ranking System:**
   * Build the belt/rank system where players earn ranks based on their match performance. Higher ranks unlock exclusive rewards and provide access to elite tournaments.
   * Develop leaderboard functionality to track top players and reward them at the end of each season.
2. **Tournament Mode:**
   * Implement a tournament system where players can enter low-stakes tournaments using Elemental Coins or ICP tokens.
   * Tournaments will reward players with rare NFT cards or Elemental Coins, recorded on-chain for transparency.
3. **Daily Challenges and Quests:**
   * Develop daily quests and challenges to engage players regularly. Example quests could include "win three matches" or "trade a card in the marketplace" with small in-game rewards.

**Sprint Breakdown:**

* **Sprint 1 (Days 1-10):**Develop the rank and leaderboard system, ensuring players can track their progress and view global standings.
* **Sprint 2 (Days 11-20):**Build the tournament system and integrate it with the matchmaking and reward distribution contracts.
* **Sprint 3 (Days 21-30):**Test all features, including progression, tournaments, and daily quests, ensuring smooth player experience and bug-free performance.

**Final Milestone Reward:** $10,000