Proof of Duel Game Design Document

Solana Game Super Jam 2025

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Repository: https://github.com/Rayato159/proof-of-duel

Overview

Introduction

"Proof of Duel" is a multiplayer PvP combo shooting game where players must press the keys shown on screen to deal damage to their opponents. The win/loss statistics are then recorded on the Solana blockchain.

Theme & Backstory

The concept for **Proof of Duel** originated from my nostalgia for the **rhythm-action** gameplay of Patapon. I wanted to create something that uses a **"press-in-time"** mechanic and reimagine it as a real-time PvP game.

Instead of leading a marching tribe into battle, **Proof of Duel** places players in the tense, high-stakes world of a cowboy duel. Two gunslingers face each other in the desert. The rules are simple: react faster and execute your combo with perfect timing to win the game.

Genre

My game is a competitive, combo-based shooting game. It shares gameplay elements with titles such as Patapon, Osu!, and others.

Game Fantasy

I want players to experience a rhythm-action style of gameplay. One that demands practice, precision, and timing to outplay their opponents. **Proof of Duel** aims to challenge the traditional idea of a shooting game, showing that it doesn't have to be just about clicking the mouse to fire. Instead, every shot is tied to a sequence of inputs, turning combat into a skill-based performance.

Goal

Short-term goal

The game allows players to create and join matches to engage in duels against one another. Then integrates with the Solana blockchain to record each player's win–loss statistics.

Medium-term goal

The game will feature auto-matchmaking, allowing players to duel with strangers, along with a statistics dashboard and ranking system accessible on mobile devices.

Goal of the game

The game will allow players to drop, equip, and sell cosmetics or an item in the marketplace, as well as experiment with more creative features such as elemental bullets, elemental armor, and other unique customization options.

Core Loop

Main game Core loop
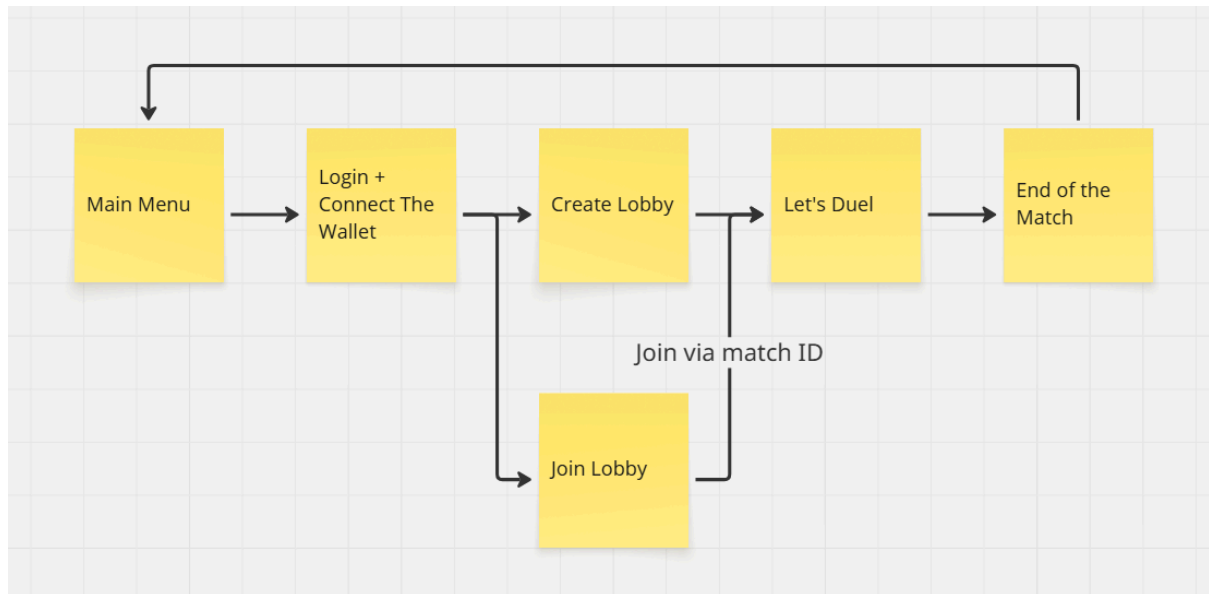
Main game core loop

How does the core loop work?

- The player opens the game and stays in the main menu.
- The player must log in before playing.
- One player creates a game, and another joins it using the same match ID generated by the creator.
- Once both players have joined the same match, the game will count down from 3–2–1, and then the duel will begin.
- After the match, all players return to the main menu, ready to repeat the process.

Features List

This section provides a deep dive into all of the game's **features**.

Login and Solana Wallet Connection

Allows players to login and connect their wallet.
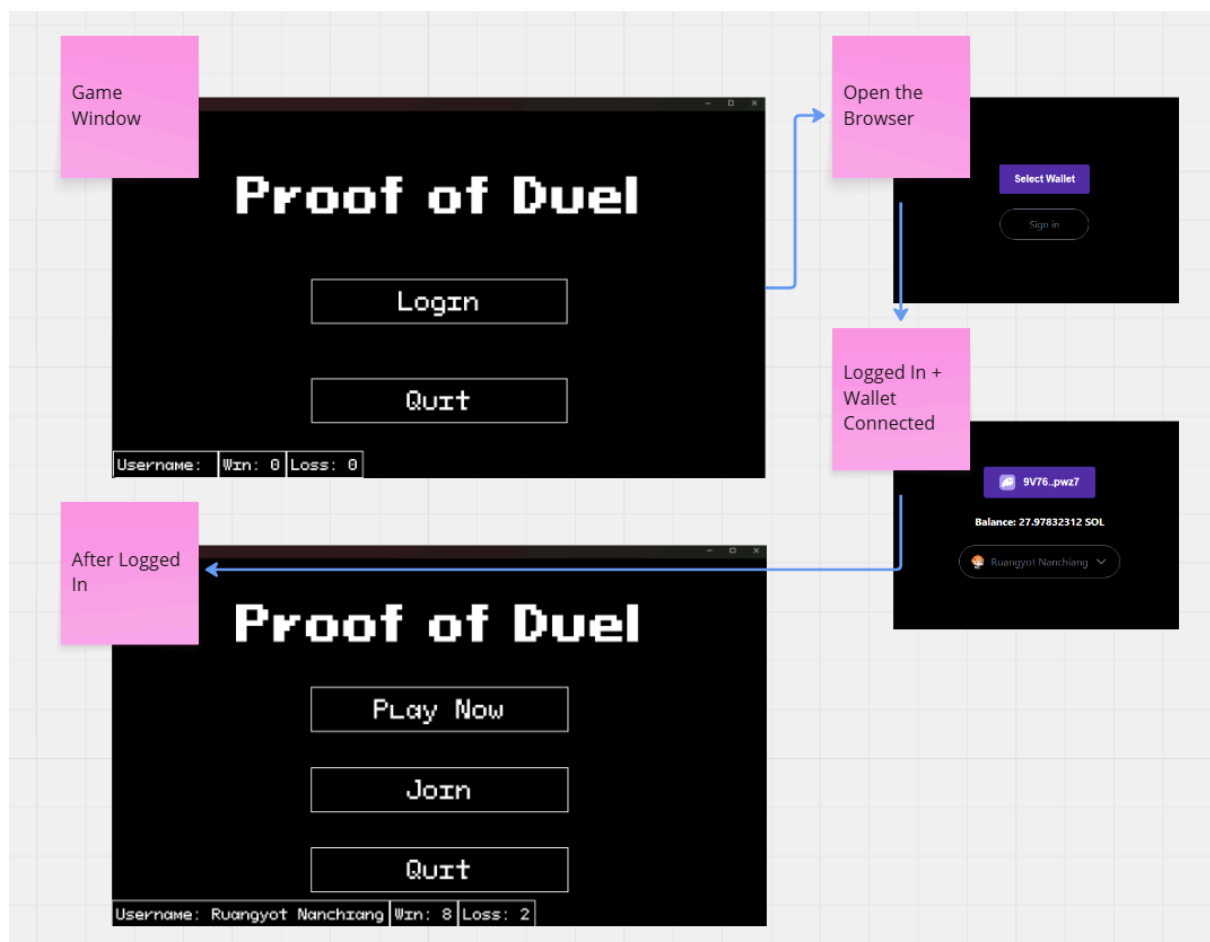
Overview

Introduction

Players must login and connect wallet before playing the game.

Purpose

To perform KYC and enable recording of players' win-loss statistics on-chain.

UI/Presentation

Flowchart

- First, players must click the login button to open the browser.
- Then, sign in through Civic Auth and connect their wallet.
- Once the above steps are completed, the main menu will update automatically, displaying your name, showing your win-loss statistics, and making the game ready to play.

Mechanics

- After players login, the frontend will send an HTTP POST request to the game
- The game will then extract the payload from the request and update the UI.
- During gameplay, while players are logged in, the game will run a scheduler through the Solana RPC (via Next.js) every 3 seconds to update the win-loss statistics.

Game Lobby

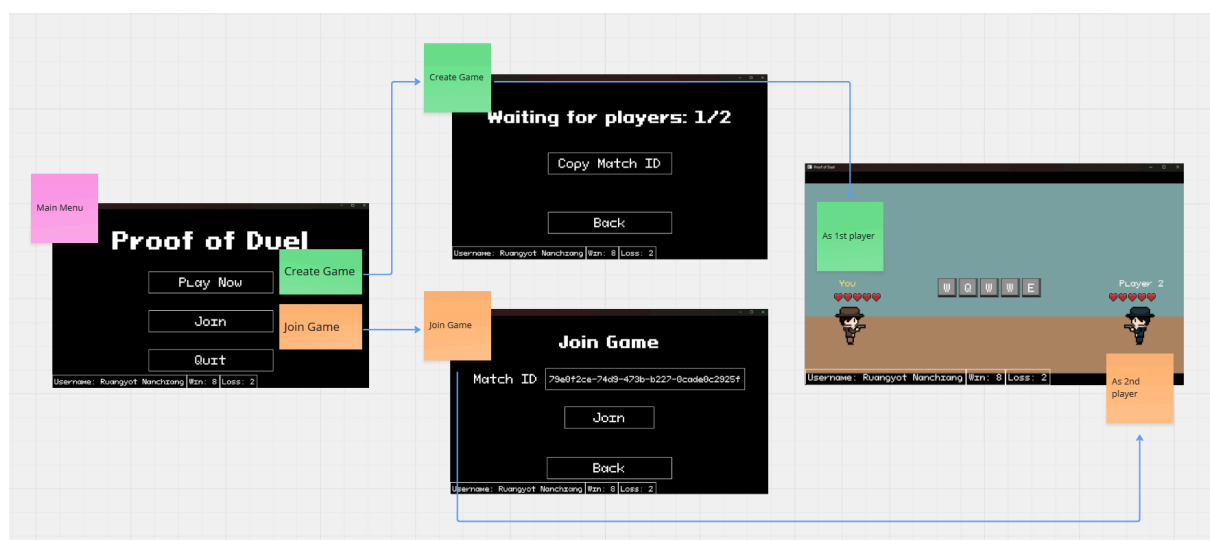Allows players to create or join a game via match ID.

Overview

Introduction

One player must create a game and share the match ID with another player, then use it to join.

Purpose

To allow players to compete together in the same match.

UI/Presentation

Flowchart

- The first player must create a game and share the match ID with the second player.
- The second player uses that match ID to join the game.
- Once both players have joined the same match, the game will start a 3-2-1 countdown before the duel begins.

Mechanics

- The 1st player creates a game can copy the match ID by clicking the button shown on the screen.
- The 2nd player must press **Ctrl + V** to paste the match ID into the input field on the UI, then click the **Join** button.
- If the second player joins, the UI will switch to a countdown screen (3-2-1) and then the duel will begin.

Combo Shooting

Players must press the keys shown on screen to deal damage to their opponents.
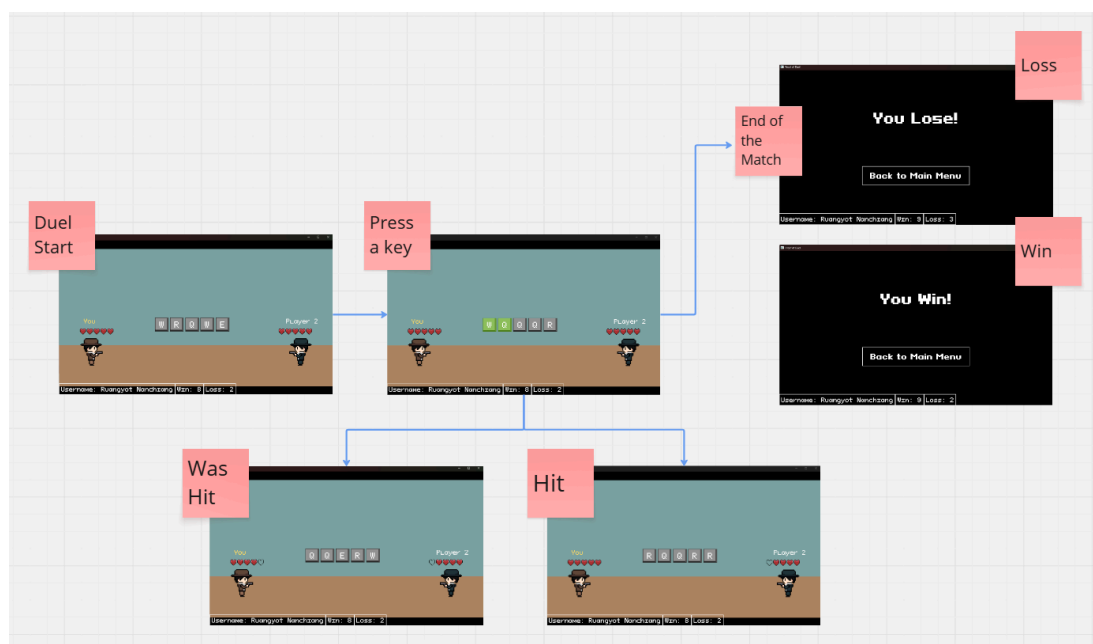
Overview

Introduction

Players must press the keys shown on screen to deal damage to their opponents. Each successful combo deals one damage, and each player starts with 5 health points.

Purpose

Allows players to deal damage to their opponents and determine the match outcome.

UI/Presentation

Flowchart

- The player must press the keys shown on the screen.
- If the correct keys are pressed, 1 damage will be dealt to the opponent.
- If the wrong key is pressed, a new set of keys will be generated.
- If a player runs out of health points, the match will end.

Mechanics

- There are 5 keys in total.
- Each key is selected from the subset {'Q', 'W', 'E', 'R'}.
- The keys will regenerate if the player presses the wrong key or after all keys have been pressed correctly.

Roadmap

Scope

- Available to do matchmaking with other players.
- Capable of recording win-loss statistics on the Solana blockchain.
- The game will ultimately feature an NFT and coin drop system.
- NFTs may include items or cosmetics that players can use in-game.
- A marketplace will be implemented where players can buy, sell, or trade NFTs with each other.

Timeline
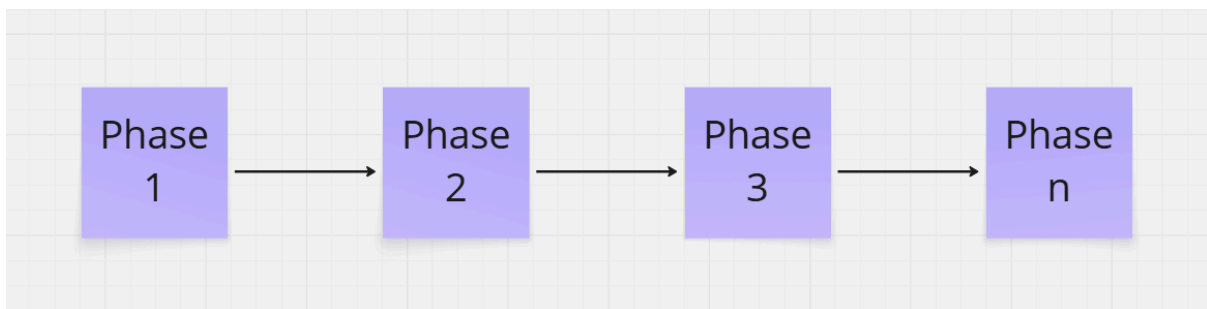
Phase 1

Duration

14 Days

Goal

Available to do matchmaking with other players.

Content

Players can login, connect their wallet, track their win-loss statistics on Solana, and compete against each other.

Phase 2

Duration

30 Days

Goal

Available for random matchmaking with other players, along with a ranking dashboard.

Content

Players can matchmake to duel with strangers, view the top 10 players with the most wins, and see their own rank.

Phase 3

Duration

120 Days

Goal

The game will ultimately feature an NFT and coin drop system, along with an integrated marketplace.

Content

Winning a match rewards the player with coins and an NFT. NFTs may include in-game items or cosmetic enhancements. An integrated marketplace will allow players to buy, sell, and trade NFTs with one another.

Phase n

Duration

No required

Goal

To keep the game from becoming boring, an element system for bullets and armor may be added.

Content

To keep the gameplay fresh and strategic, an element system may be added. Bullets and armor will have elemental types (e.g., Fire, Water, Electric, Nature) with strengths and weaknesses against each other. This encourages players to adapt their loadout and strategy based on their opponent, making each duel more dynamic and competitive.