

# Sumthn.fun

## Executive Summary

### Overview

"Sumthn.fun" is a decentralized, player-versus-player gaming platform built on a gas efficient evm L2 blockchain. It leverages smart contracts for secure escrow management and automated payouts while offering an immersive, cross-device user experience (desktop, iPad, and mobile). Players choose from reskinned classics like Tetris, Temple Run, and Bubble Bop and use a Tinder-style matching system to challenge opponents. Each game session runs over private WebSockets with spectator "read-only" rooms and integrated chat to foster community interaction.

### Platform Walkthrough

- **Dashboard & Matching:** Upon login, users see a clean, responsive dashboard to select a game and view available challenges. A Tinder-like interface enables users to swipe through opponents and prop bet offers.
- **Game Sessions:** Once matched, users enter a secure game lobby. The session is hosted on private WebSockets, ensuring real-time gameplay and score tracking. Game results trigger off-chain verification and on-chain payout via pre-configured smart contracts deployed by a CREATE2 factory.
- **Leaderboards & Tournaments:** Individual game leaderboards and a global ranking system encourage competitive play. Weekly "Tournament of Champions" invites top-20 players for a free tournament with crypto prize pools.
- **Blockchain & Security:** Every game uses a standard betting and payout format irrespective of in-game logic. Robust on-chain cheat detection automatically flags offenders, blacklisting them and reallocating funds to community raffles.
- **Social Integration:** The platform integrates social media tools for sharing achievements, live chat during matches, and community forums to enhance engagement and build a vibrant arcade community.

# Detailed Scope of Work

**Project Timeline:** 30 Days (Ideation to CI/CD Deployment)

## Phase 1: Ideation & Planning (Days 1-3)

- Finalize platform requirements and user flows
- Define technical architecture: React Vite with TypeScript frontend, Express/Node.js backend, PostgreSQL DB, and Ethereum smart contracts
- Establish project management tools and version control (Git)

## Phase 2: Architecture & Setup (Days 4-7)

- Set up repository structures for frontend, backend, and smart contracts
- Configure development environments, CI/CD pipelines (e.g., GitHub Actions, Docker)
- Define database schemas and API contracts

## Phase 3: Development (Days 8-18)

- **Frontend:**
  - Build responsive UI components (dashboard, matching interface, game lobby, leaderboards)
  - Integrate WebSocket client for live game sessions and chat rooms
  - Implement social media sharing and authentication (OAuth/social login)
- **Backend:**
  - Develop RESTful APIs for user authentication, game state management, leaderboards, tournaments, and chat services
  - Implement PostgreSQL models and query endpoints
- **Blockchain Integration:**
  - Develop and test smart contract factory and game contracts (escrow, payout, cheat detection)

- Integrate wallet and token transaction functionality for meme token betting and ETH fee payments

#### **Phase 4: Integration & Testing (Days 19-28)**

- Integrate frontend with backend APIs and blockchain services
- Conduct unit, integration, and end-to-end tests across all modules
- Perform smart contract audits and simulation testing using test networks
- Validate WebSocket reliability and chat functionalities

#### **Phase 5: CI/CD, Deployment & Final QA (Days 29-30)**

- Finalize CI/CD pipeline configurations, automated testing suites, and staging deployments
- Complete final round of QA, bug fixes, and performance optimizations
- Prepare release notes and documentation for handover

# Comprehensive User Stories

## 1. User Account Management

- *As a new user, I want to register using email or social login so that I can quickly access arcade.fun.*
- *As a registered user, I want to securely log in/out and manage my profile details.*

## 2. Dashboard & Game Selection

- *As a user, I want to view a responsive dashboard listing available games and challenges so I can choose my preferred match.*
- *As a user, I want to see real-time updates on active games and leaderboard standings.*

## 3. Matchmaking & Challenge Initiation

- *As a user, I want to swipe through potential opponents using a Tinder-style interface and send prop bet challenges.*
- *As a user, I want to accept or decline challenges and join ongoing matches seamlessly.*

## 4. Game Sessions & Live Interaction

- *As a player, I want to join a secure, private game session hosted via WebSockets so that gameplay remains uninterrupted and real-time.*
- *As a spectator, I want to view live matches with read-only access to encourage community engagement.*
- *As a player, I want an integrated in-game chat room to communicate with opponents and spectators.*

## 5. **Smart Contract & Blockchain Transactions**

- *As a user, I want my bet placed via a standard smart contract that manages escrow and automated payouts based on the highest score.*
- *As a user, I want to place bets using any meme token while paying fees in ETH.*
- *As an admin, I want to flag and blacklist any cheater on-chain, triggering fund clawback and public raffle distribution.*

## 6. **Leaderboards & Tournaments**

- *As a user, I want to view game-specific and global leaderboards so I can track my ranking and progress.*
- *As a top-ranked player, I want to receive an invitation to the weekly Tournament of Champions for a chance to win a crypto prize pool.*

## 7. **Game Management & Administration**

- *As an admin, I want to add or remove games (e.g., reskinned Tetris, Temple Run, Bubble Bop) without deploying new contracts, ensuring uniform payout rules.*
- *As an admin, I want a back-end dashboard to configure game parameters and monitor active sessions.*

## 8. **Social Media & Community Tools**

- *As a user, I want to share my game results and achievements on social media (Twitter, Facebook, etc.) to promote arcade.fun.*
- *As a user, I want access to community forums and direct messaging features to interact with other players and organize challenges.*