Simple PRD: Crypto Exchange (Backend Focus)

Objective

To gain hands-on experience with blockchain integration, we'll develop a simple cryptocurrency exchange backend. This project will focus on core blockchain interactions while remaining flexible to adapt to technical discoveries or best practices. The goal is to tackle functionalities that may challenge traditional web developers unfamiliar with blockchain/crypto concepts.

Scope

- Backend development only (no frontend).
- Requirements may evolve based on technology constraints or common practices.
- Target delivery timeline: **2 weeks**.

Core Requirements

1. **User Authentication**
   - Users can log in and receive an auth token for authenticated API calls.
2. **ERC-20 Token Deposits**
   - Users can "charge" (deposit) sample ERC-20 tokens into their exchange account.
3. **Order Management**
   - Users can place orders of known types (e.g., limit, stop).
   - Orders are settled when conditions are met, with fees deducted.
4. **Token Withdrawals**
   - Users can transfer tokens from their exchange account to external personal wallets.

Stretch Goals (If Time Permits)

- Atomic swaps.
- Cross-chain bridges.
- Multi-chain integration (non-blocking, as this is more of an architectural challenge than a core blockchain problem).

Notes

- This is a learning-focused project; perfection is secondary to practical exploration.
- Priorities may shift based on technical hurdles or new insights.