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PredictionChain: Decentralized Prediction Crowdfunding dApp

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What is PredictionChain?

A decentralized platform where users:

- choose outcomes
- place bets using test ETH
- receive rewards based on results
- earn ERC-20 participation tokens (PRED)

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Architecture

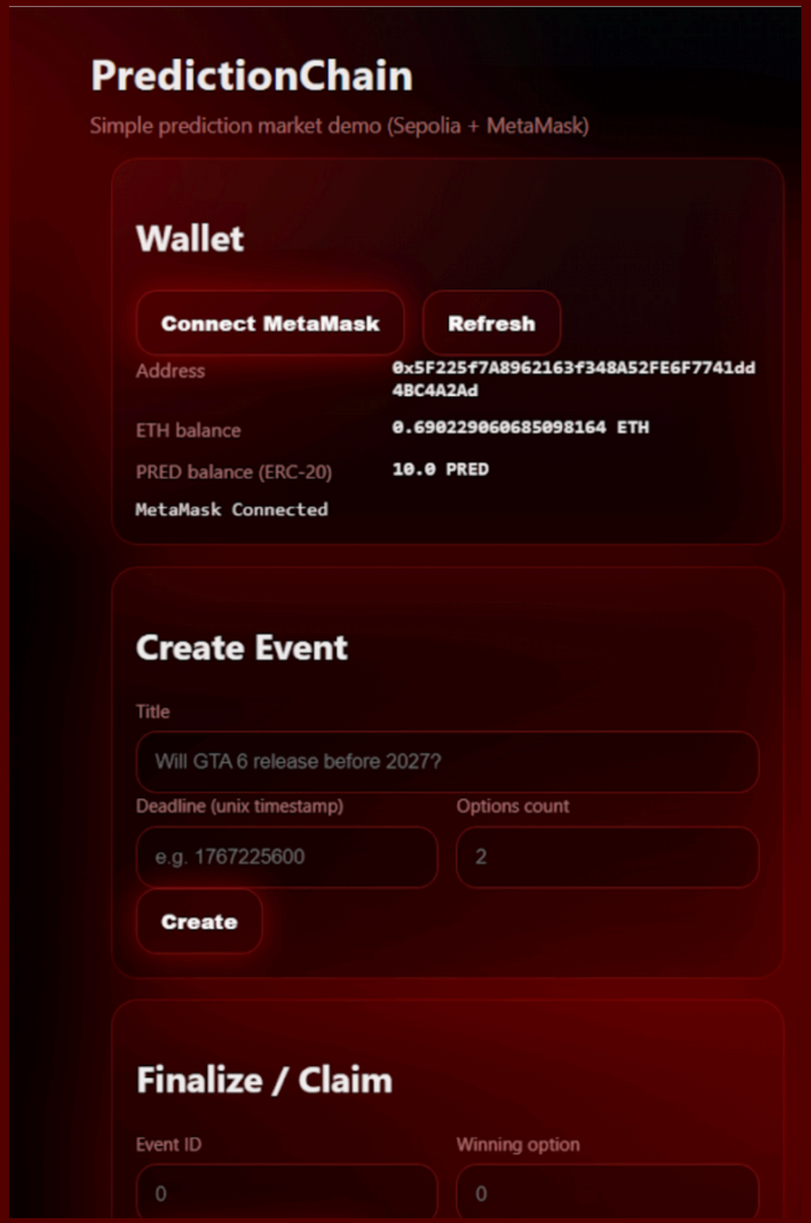
User → Frontend → Smart Contracts → Ethereum Testnet
(MetaMask + ERC-20 labels)

Components

- Frontend (Web App): UI + interaction with contracts
- Smart Contracts: Event creation, contributions, payouts
- MetaMask: Wallet connection & transaction signing
- ERC-20 Token Contract: Participation/reputation token

Key Technologies

Solidity • Ethers.js • MetaMask • Sepolia/Holesky testnet



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Event Structure

EVERY EVENT INCLUDES:

- TITLE
- OUTCOMES (A/B/C)
- DEADLINE
- TOTAL ETH POOL
- POOLS PER OUTCOME
- CREATOR
- STATUS

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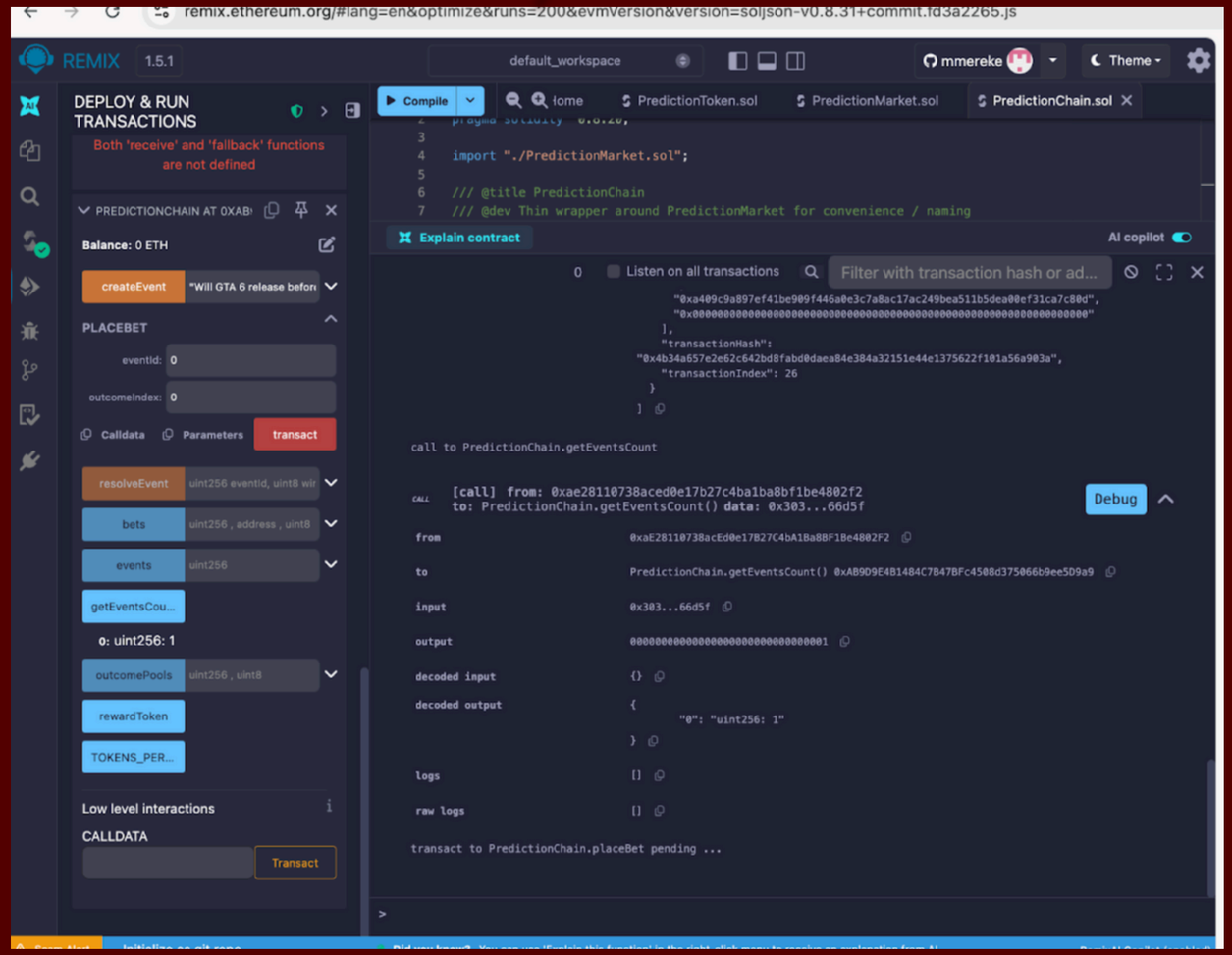
How Users Participate

1. USER CONNECTS METAMASK
2. CHOOSES AN EVENT OUTCOME
3. SENDS TEST ETH (VALUE)
4. CONTRACT STORES THE BET
5. ERC-20 PRED TOKENS ARE MINTED AUTOMATICALLY



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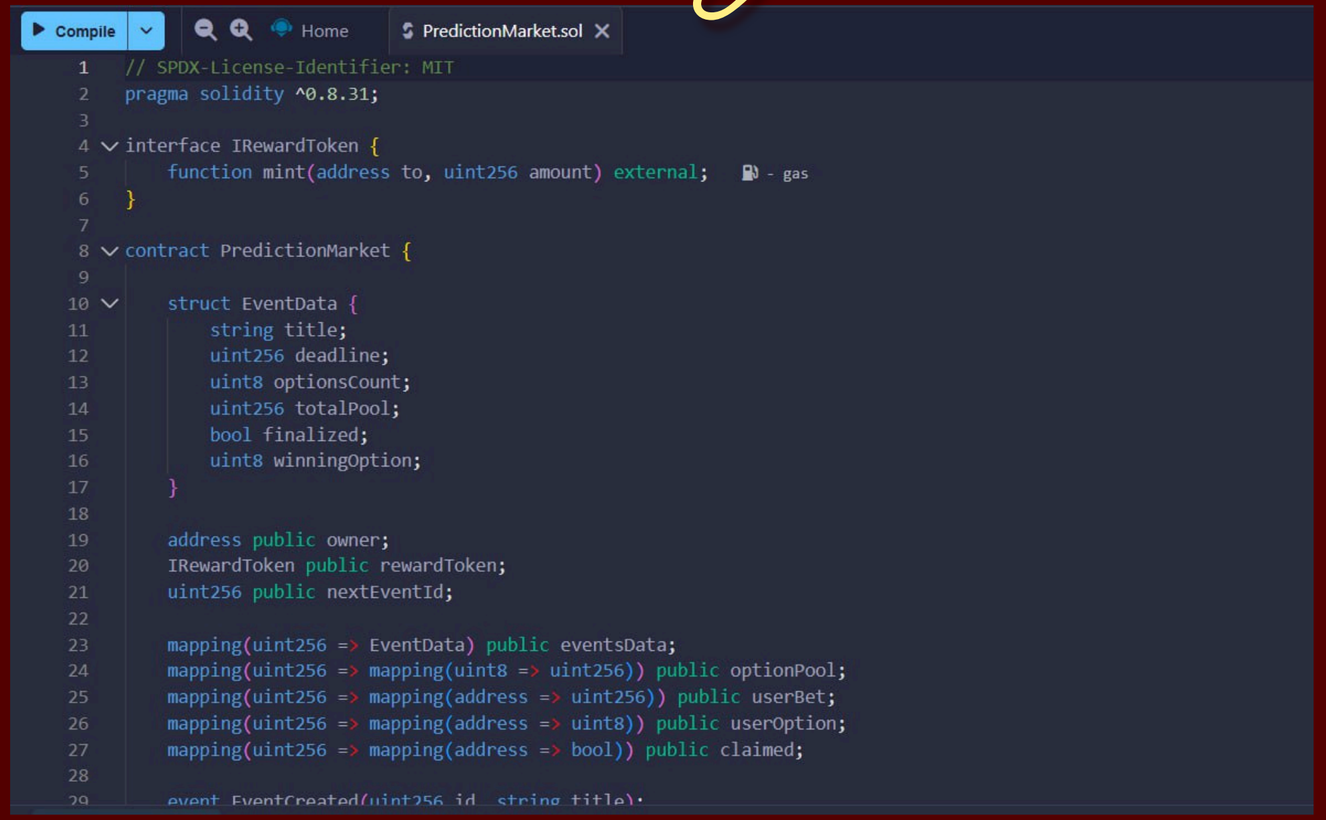
Smart Contract Logic

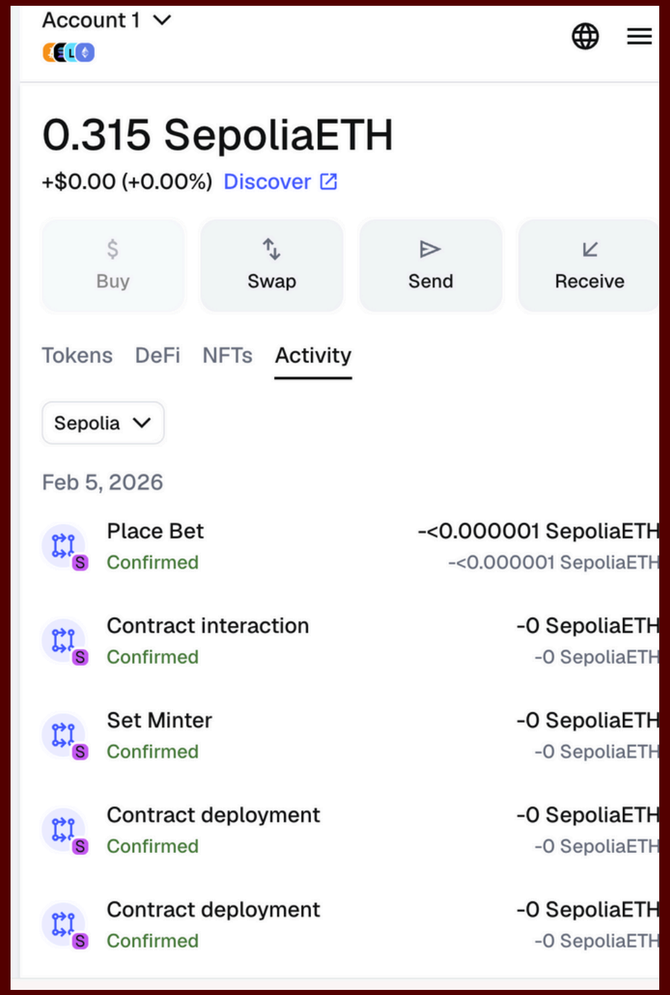
PredictionMarket

- createEvent()
- bet()
- finalize()
- claim()

RewardToken

- ERC20
- mint()
- setMinter()
-





Tokenomics

PRED = PredictionChain Participation Token

- ERC-20 standard
- 18 decimals
- minted only by PredictionChain
- 1 wei = 1 PRED
- used as reputation/participation token

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Deployment

Deployed Contracts:

1)PredictionToken

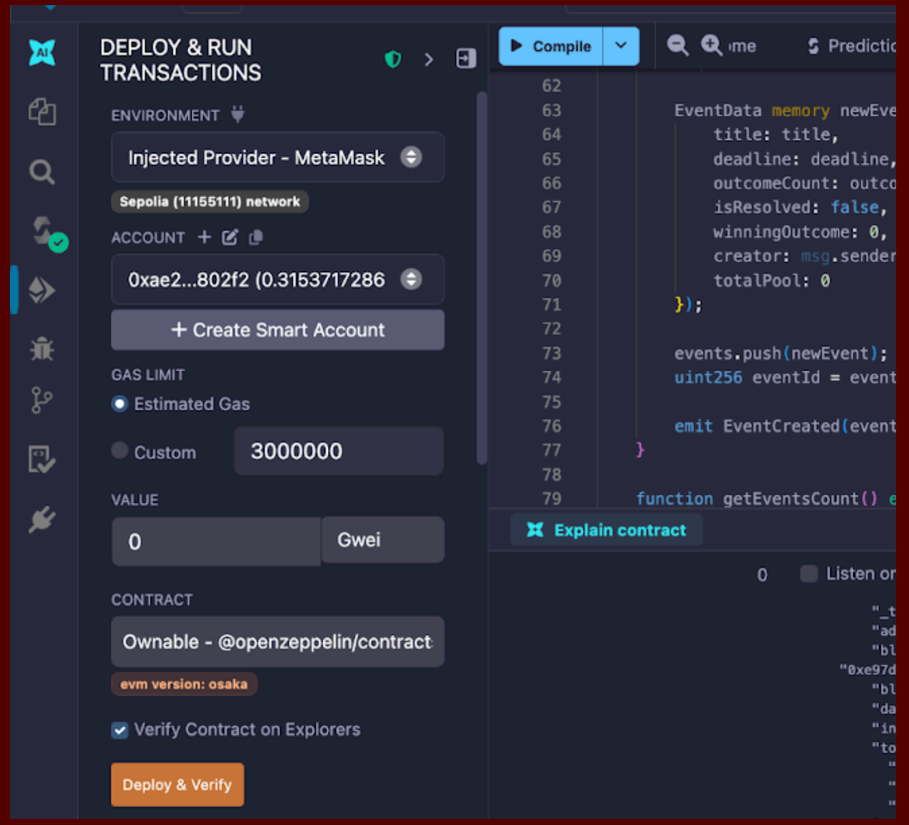
2)PredictionChain

Tools used:

Remix IDE

MetaMask

Sepolia Faucet



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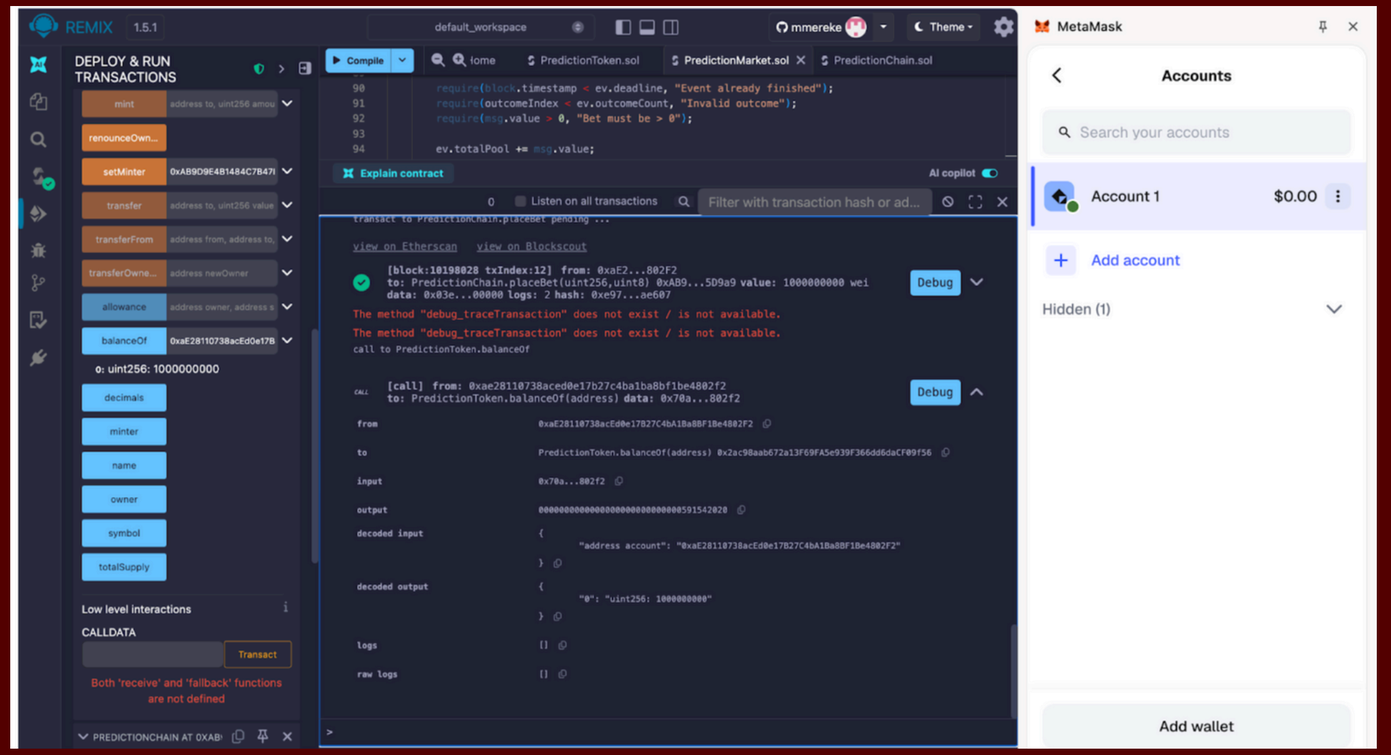
Testing

Manual tests performed:

- Creating events
- Sending bets with value
- Minting PRED tokens
- Checking balances
- Resolving event
- Claiming rewards
- Viewing ETH distribution



STUDIO SHODWE