

Decentralized Voting System

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What Is This Project?

- A blockchain-based voting application
- Enables secure, transparent elections without a central authority
- Uses Ethereum test networks for deployment
- Integrates with MetaMask for user interaction

Why Decentralize d Voting?

Problems with traditional voting

- Centralized systems can be tampered with
- Lack of transparency
- Blockchain advantages
- Immutable ledger
- Transparent and traceable results
- No single point of failure

Key Features

- Create Elections
- Vote Securely
- MetaMask Integration
- ERC-20 Participation Rewards
- Uses Solidity + Hardhat for smart contracts

Tech Stack

Component

- Smart Contracts
- Blockchain Dev
- Frontend
- Wallet Integration
- Package Management

Technology

Solidity

Hardhat

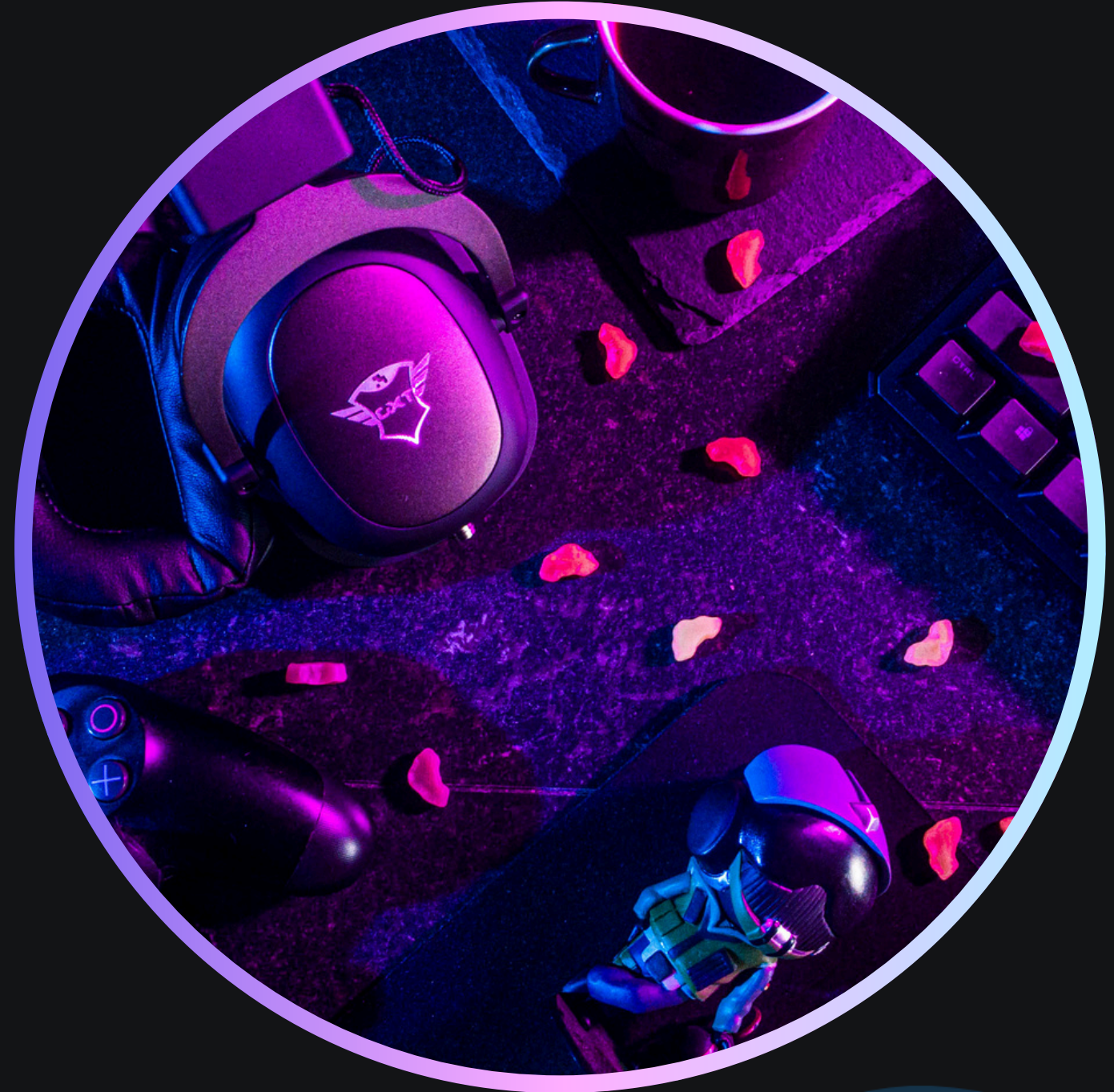
JavaScript / Web3

MetaMask

npm

How It Works

1. Deploy smart contract using Hardhat
2. Frontend connects via Web3 and MetaMask
3. Create election — set title, candidates, duration
4. Voters connect wallet & vote
5. Votes recorded on blockchain
6. Participants receive tokens (ERC-20)



Benefits

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1. Security: Immutable vote records

2. Transparency: Everyone can verify results

3. User-Friendly: MetaMask makes it easy to interact

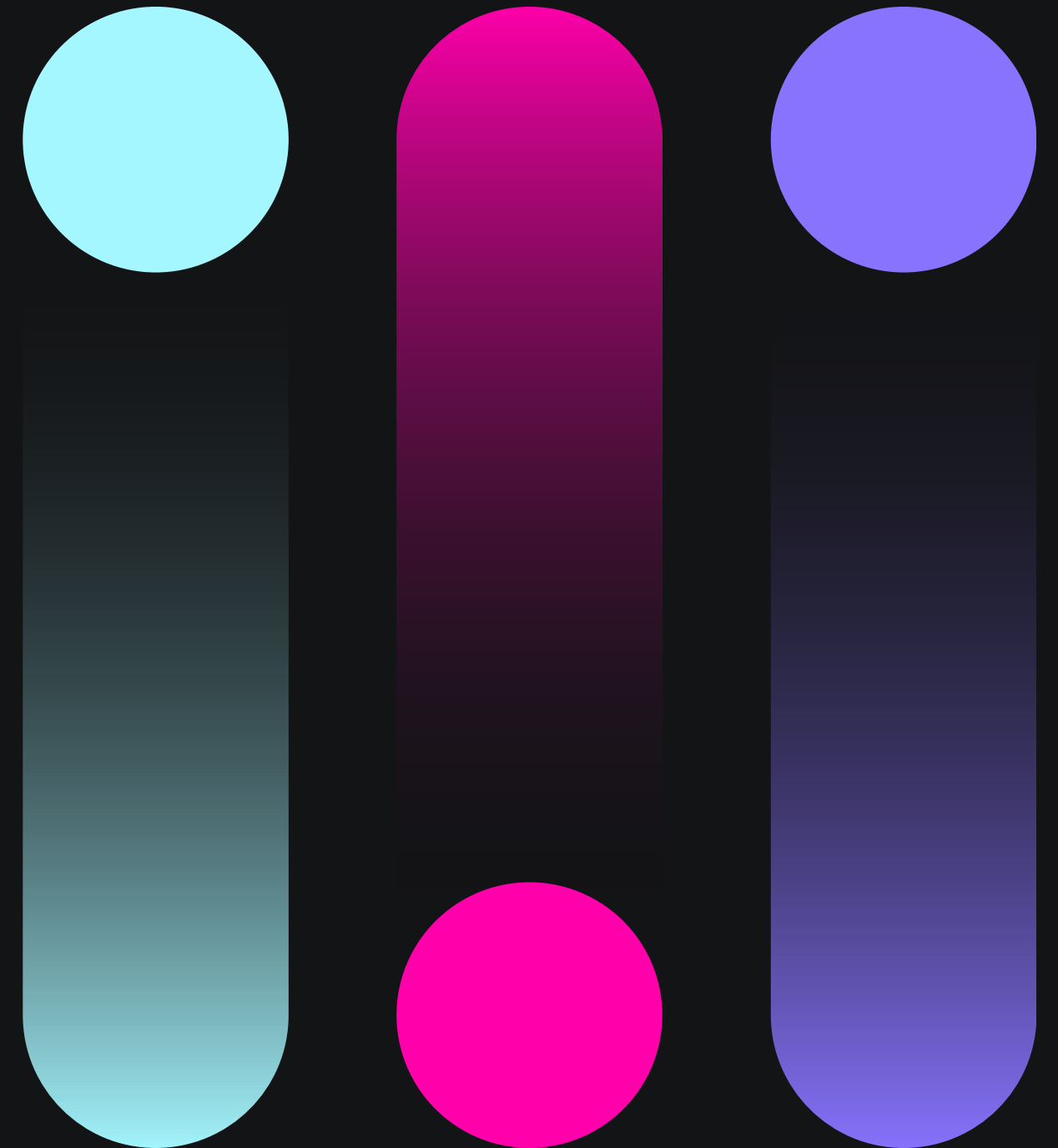
4. Incentivized Participation: Token rewards

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Limitations & Future Work

- ✗ Needs testnet ETH for transactions
- ✗ Currently on testnet only
- ✗ Could expand features like:

- Role-based access (admins)
- Real-time result dashboard
- Multi-chain support



Conclusion

- A full decentralized voting prototype
- Excellent hands-on use of blockchain tech
- Practical for demos and learning about smart contracts