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Blockchain Voting System

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Abstract: Democratic elections are essential for governance, but traditional systems like paper ballots, electronic voting machines (EVMs) face challenges such as unpredictability, voter fraud, manipulation, low turnout and security weaknesses. Blockchain technology provides a decentralized, consistent and transparent system for digitally secured transactions The parent provides solutions. This paper presents the development and testing of an e-voting system using blockchain, which has been implemented mainly as a smart contract on the Ethereum network using the Solidity language by distributing a large amount of gas (tokens) to voters each wallet, our system ensures votes can't become duplicates. This decentralized approach removes the need for intermediaries and enhances the security, transparency and integrity of the electoral process. We explore the advantages and limitations of blockchain-based e-voting, including scalability problems and token costs. The results highlight blockchain's potential to transform digital elections and identify areas for further research to increase adoption.

Keywords: Blockchain technology, e-voting, smart contracts, Ethereum, digital voting security





728