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Implementation and Security of Blockchain based Electronic Voting System

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Abstract: *With increasing demand for a secure, transparent, and efficient election process, blockchain technology has proven to be a promising solution for modernizing the electoral system. This article presents the design and implementation of a blockchain-based E-voting system, using intelligent contracts and distributed networks to ensure data integrity, voter anonymity, and operational prevention interactions. The proposed system allows authenticated administrators to manage elections by adding, updating, or deleting candidates. The investigation begin,s and the results are declared. This allows verified voters to safely hand over their voices and access real results. All voting transactions are recorded on the undercut blockchain, encouraging full transparency and testing potential. Using smart contracts automates polling logic, enforces rules, and minimizes the risk of human error and operations. The paper examines the architecture, interaction and security features of systems and demonstrates the potential to improve the reliability and efficiency of the election process.*

Keywords: Blockchain, E-voting system, Smart contracts, Decentralization, Security, Transparency, Electoral Integrity

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