Utilizing Blockchain Technology and Fingerprint Authentication for an Electronic Voting System.

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Abstract*: The advent of digital technology has brought about a significant transformation in people's lives. However, unlike various aspects of modern life that have embraced digitalization, the electoral system continues to rely heavily on conventional paper-based methods. This reliance poses challenges to the fundamental principles of security and transparency, particularly in traditional offline elections. Presently, general elections employ a centralized system managed by a single organization, leading to potential vulnerabilities within the system. The concentration of control over the database presents opportunities for manipulation. Leveraging blockchain technology offers a viable solution by introducing a decentralized system where the database is collectively owned by multiple users. Blockchain's effectiveness in decentralized systems, as evidenced by its successful application in Bitcoin, presents an opportunity to address the vulnerabilities of the traditional electoral system. This project seeks to implement a blockchain-based algorithm for recording voting results across all polling locations. Unlike Bitcoin's Proof of Work mechanism, this approach will employ a predetermined rotation system for each node within the blockchain structure, ensuring enhanced security and integrity in the electoral process.*

Keywords: Security Measures, Safeguarding, Online Voting System, Voter Authentication, Visual Secret Sharing

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