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Blockchain Based Voting System

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Abstract: In recent years, the integrity and transparency of electoral processes have come under increased scrutiny. Traditional voting systems, whether paper-based or electronic, often face challenges related to security, voter fraud, data manipulation, and lack of trust. Blockchain technology, known for its decentralized, immutable, and transparent nature, offers a promising solution to these issues. This paper proposes a blockchain-based voting system that ensures secure, transparent, and tamper-proof elections. Utilizing smart contracts and cryptographic techniques, the system enables secure voter authentication, anonymity, and real-time vote tallying, while ensuring that all votes are recorded immutably on a distributed ledger. The proposed system enhances voter confidence, reduces the risk of manipulation, and supports remote voting without compromising security. This approach has the potential to revolutionize democratic participation by providing a trustworthy and efficient electoral process.

Keywords: Blockchain, Voting System, Java, JavaFX, Decentralized Ledger, Secure Elections

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