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Secure E-Voting Using Blockchain Technology

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Abstract : An election is an important event in all countries. Traditional voting has several drawbacks, including the expense of time and effort required for tallying and counting results, the cost of papers, arrangements, and everything else required to complete a voting process. Many countries are now considering online e-voting systems, but the traditional e-voting systems suffer a lack of trust. It is not known if a vote is counted correctly, tampered or not. A lack of transparency means that the voter has no assurance that his or her vote will be counted as they voted in elections. Electronic voting systems are increasingly using blockchain technology as an underlying storage mechanism to make the voting process more transparent and assure data immutability as blockchain technology grows in popularity. The transparent feature, on the other hand, may reveal critical information about applicants because all system users have the same entitlement to their data. Furthermore, because of blockchain's pseudo-anonymity, voters' privacy will be revealed, and third parties involved in the voting process, such as registration institutions, will be able to tamper with data. To overcome these difficulties, we apply Ethereum smart contracts into blockchain-based voting systems.

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