



# Blockchain Technology based E-voting system

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**Abstract:** Building a secure electronic voting system that offers the fairness and privacy of current voting schemes, while providing the transparency and flexibility offered by electronic systems has been a challenge for a long time. In this work-in-progress paper, we evaluate an application of blockchain as a service to implement distributed electronic voting systems. The paper proposes a novel electronic voting system based on blockchain that addresses some of the limitations in existing systems and evaluates some of the popular blockchain frameworks for the purpose of constructing a blockchain-based e-voting system.

**Keywords:** blockchain; digital transformation; e-voting system; security; scalability; systematic review

## I. INTRODUCTION

BLOCKCHAIN TECHNOLOGY HAS been recognized as a potential solution for secure and transparent e-voting systems. By leveraging the decentralization, immutability, and transparency of blockchain technology, e-voting systems can prevent fraud and manipulation, improve voter anonymity, and increase trust in the electoral process. Moreover, blockchain-based e-voting systems can reduce the cost and time associated with traditional voting systems. Traditional voting mechanisms commonly rely on centralized entities, which can give the opportunity for vulnerabilities such as the tampering of results or electoral fraud. The decentralized and immutable features inherent in blockchain technology offer a promising solution to the vulnerabilities related to traditional and other e-voting approaches. Blockchain technology has the ability to create a tamper-proof and transparent platform for conducting e-voting. The growing interest in blockchain-based e-voting systems indicates the importance of a comprehensive and systematic evaluation of the current knowledge in this domain. One of the aims of this review is to identify the main benefits of e-voting systems based on blockchain technology through an in-depth review of the previous research. These benefits include heightened security, transparency, decentralization, and privacy. implementations involved in blockchain-based e-voting platforms is imperative in order to evaluate their feasibility AND FUNCTIONALITY.

## II. LITERATURE SURVEY

[1] Vaibhav Anasune , Pradeep Choudhari, Madhura Kelapure and Pranali Shirke Prasad ; “Online Voting: Voting System Using B-chain”, 2019, article gives a short review on various methodologies that are used in current voting . The paper will help to build a system that will the present and upcoming challenges and will remove drawbacks from these previous architecture.

[2] G Bhavan ; “Survey on Blockchain Based E-Voting Recording System Design” ,2018, By adopting blockchain in the distribution of databases on e-voting systems can reduce one of the cheating sources of database manipulation.

[3] : Friðrik Þ. Hjálmarsson , Gunnlaugur K. Hreiðarsson ; “Blockchain-Based E-Voting System ” ,2018 , this paper evaluates the potential of distributed ledger technologies through Description of a case study, namely the process of an election and implementing a blockchain-based application which improves the security and decreases the cost of hosting a nationwide election.

[4] F. Blockchain Based E-Voting Recording System Design: Rifa ; ,2017, “Blockchain Based E-2017, “Blockchain Based E-Voting Recording System Design” , this recording system occurs when the vote is over. Blockchain technology can be one solution to solve the problems that often occur in the electoral system. The use of hash values in recording the voting results of each polling station linked to each other makes this recording system more secure and the use of digital signatures makes the system more reliable. The use of sequence proposed in the blockchain creation process in this system considers that in an electoral system not required for mining



as in the Bicton system because the voter data and number are clear and are not allowed to select more than once, the proposed sequence ensures that are nodes which is legally connected and can avoid collision in transportation .

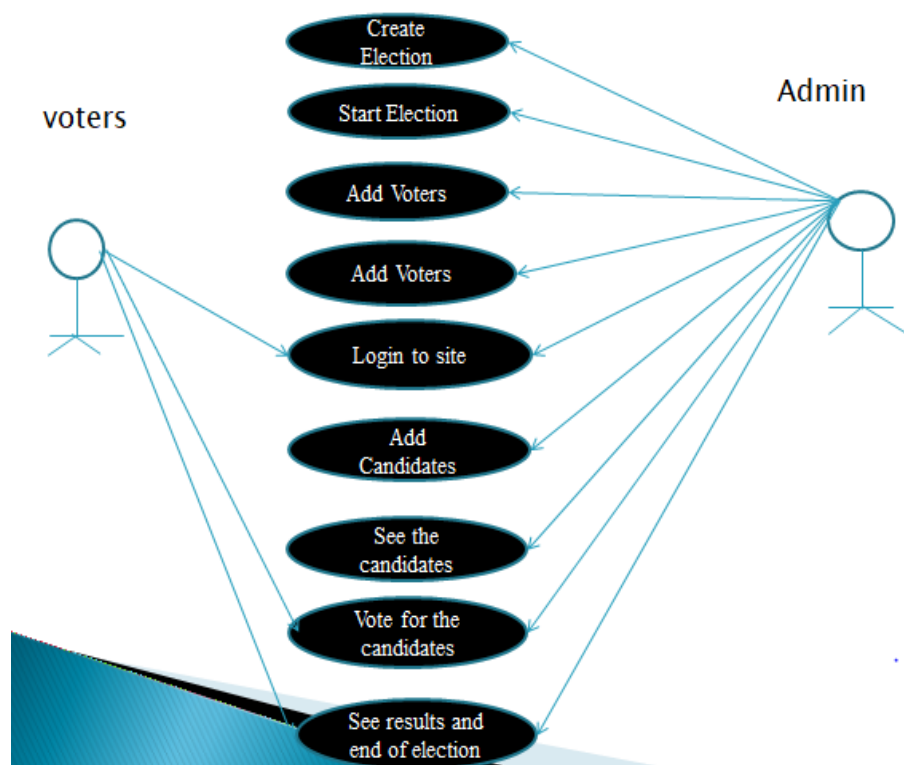
III .PROBLEM STATEMENT

In the world, mainly democratic countries face many challenges that prevent country growth through various illegal activities such as corruption and violations of human rights, etc. Citizens are often unable to take part in elections because of the voting system (Krishnamurthy et al., 2019). Consequently, whenever it comes to voting, the typical person suffers very much in terms of clarification and protection. In a country like Bangladesh, traditional systems require hours of voting, while they have a lot of repetitive operations and many odd obstacles to elections: capturing polling stations, reinforcing ballots, separating poll agents from competitors, threatening voters to keep away from voting, sometimes polling officer have done bizarre behavior to take the side of particular candidates . When using a digital voting procedure, security is always the primary concern . Blockchain is now one of the emerging, rugged technologies that enable applications to obtain strong security mechanisms . Blockchain technology may be used to create a reliable and secure automated voting system.

IV.OBJECTIVES

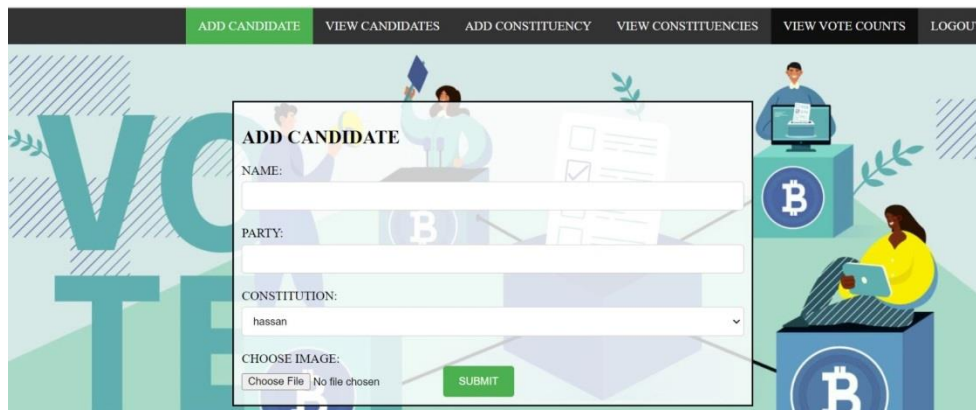
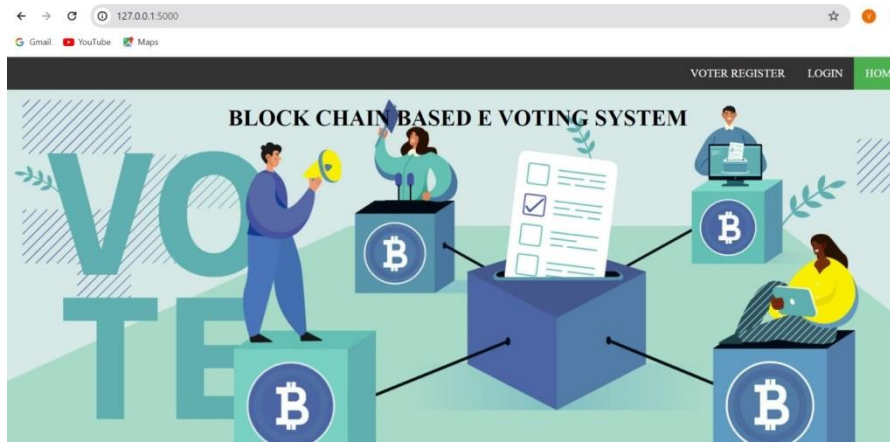
- No power-hungry organization must be able to manipulate and rig the election process.
- To protect voter identity by providing unlinkability between voter and their casted vote
- To reduce the transaction cost compared with the existing systems.

V.USE –CASE DIAGRAM





VI.RESULTS



CONSTITUENCIES LIST

NAME	STATUS	ACTION
hassan	Active	<a href="#">DEACTIVATE</a>
Mysore	Inactive	<a href="#">ACTIVATE</a>
Banglore	Inactive	<a href="#">ACTIVATE</a>

VOTES LIST

CANDIDATE NAME	PARTY	CONSTITUTION NAME	VOTE COUNT
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**VII .CONCLUSION**

The evolution of blockchain-based e-voting systems has been marked by significant advancements, as evidenced by research papers from this period. Significant studies emerged, proposing a novel approach to utilizing blockchain technology for recording votes for different voting scenarios. These systems aimed to address common limitations in existing voting systems and involved a critical evaluation of popular blockchain frameworks suitable for e-voting applications. During the years, the primary research emphasis shifted towards enhancing security and developing robust frameworks for blockchain-based e-voting systems. In recent years, the other aspects of e-voting systems, scalability and cost efficiency, have received more attention. Moreover, the importance of privacy-preserving protocols grew significantly, prompting the development of coercion-resistant and privacy-preserving e-voting protocols

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- [2] G Bhavan,i ,(2018) ,“Survey on Blockchain Based E-Voting Recording System Design”
- [3] Friðrik Þ. Hjálmarsson , Gunnlaugur K . Hreiðarsson , (2018)“Blockchain-Based E-Voting System “
- [4] Design Rifa Hanifatunnisa and Budi Rahardjo,(2017) , Blockchain Based E-Voting Recording System