



# Voter Management System Using Block-chain

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**Abstract**— Voting online require highest level of security as certain things/results relay upon it. Online voting platform should have features like tamperproof functionality, scalable, reliable, real time updation and many more. Major of the security related issues can be solved using the latest technologies like Block-chain which ensures the safe and secured storage of data using the strong cryptographic algorithms. Ethereum provides us virtual machine which provide the environment for creating a Blockchain space and moderation upon it using the smart contracts. Our propose system will implement all the required and desired functions which are necessary for online voting.

**Keywords:** Ethereum, Block-chain, peer-to-peer, scalable, reliable

## I. INTRODUCTION

The aim of project is to provide reliable service that solves the issue of residents immediately. In this pandemic situation, this will help society members and community to manage society issue in a contact less way.

In residential all jobs are decided in meetings and maintenance bills, contacts number of members are noted in the papers. There is no automated system for doing all the things that generally happen in resident so that members can come to know what is happening in society.

Block chain peer-to-peer network was introduced in October 2008 as part of a proposal for Bitcoin, a virtual currency system that is deliberated a central authority for issuing currency, transferring ownership, and confirming transactions. Bitcoin is the very first application of Block-chain technology. In a Block-chain system, the ledger is replicated in a large number of a like databases, each hosted and maintained by an interested one's. When changes are entered in one node, all the other nodes are simultaneously updated. The records of the values and assets are exchanged

permanently when any transaction occurs. There is no need for third party intermediaries to verify only the user and the system. If any transaction took place on a Block-chain-based system, it would take hardly few seconds to settle that too, securely and verifiably. As transactions are stored in distributed and secure format, Voting is the field that is struggling from lack of security, centralized-authority, management-issue and many more. These all issues can be solved on major basis using decentralized, fault-proof secure system i.e., by using Block-chain technology. Now it has become very important to change current outdated voting process into completely new way.

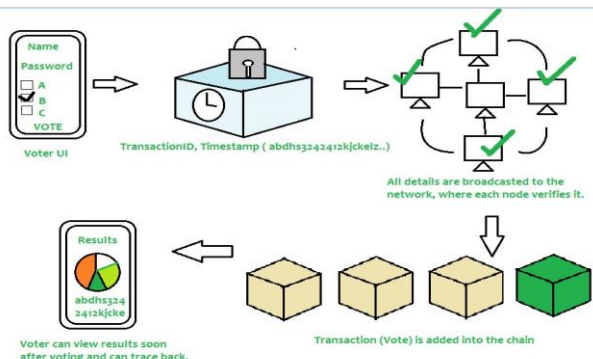
## II. PROPOSED ALGORITHM Society

This paper describes that Block-chain is one of the emerging technologies with strong cryptographic foundations enabling applications to leverage these abilities to achieve resilient security solutions. Bitcoin remains the most distinguished application of Block-chain however researchers are keen to explore the use of Block-chain technology to facilitate applications across different domains leveraging benefits such as non-repudiation, integrity and anonymity. The focus of our research is to investigate the key issues such as voter anonymity, vote confidentiality and end-to-end verification. These challenges form the foundation of an efficient voting system preserving the integrity of the voting process. The rest of the paper is organized as follows: the next section presents the requirements for an e-voting system and explains how our proposed system fulfils them, it presents the state-of-the-art with respect to e-voting and how we contribute to it followed by a detailed description of the system design

This paper proposes that E-voting is widely used in society life. But it is not obvious how to ensure the outcome is respected when the decision is financially or politically related. The correctness, security and privacy are always the most important characters. Secure e-voting is a kind of secure multi-party computation. In the voting process, a set of people make their choices and the choices of them could be kept secretly. Most of the e-voting schemes need a trusted public bulletin board to provide a consistent view to all voters. The public key is known to all parties, while the secret key is separated to all parties and nobody gets the complete secret key before key reconstruction stage. When at least of n parties upload their secrets, the secret key is reconstructed. To ensure that anybody could not tally the election result before the end of the election, the scheme uses threshold encryption without trusted third party. This paper proposes the electoral integrity is essential not just for democratic nations but also for state voter's trust and liability. Political voting methods are crucial in this respect. From a government standpoint, electronic voting technologies can boost voter participation and confidence and rekindle interest in the voting system. The traditional or paper-based polling method served to increase people's confidence in the selection by majority voting. It has helped make the democratic process. Block-chain technology works, and a complete background of this technology is discussed. How Block-chain technology can transfer the electronic voting system is covered. The problems and their solutions of developing online voting systems are identified. The security requirements for the electronic voting system are discussed

### III. System Architecture

Figure shows the general system architecture of the application wherein the the user and the admin interact with the web server which fetches the data from the database

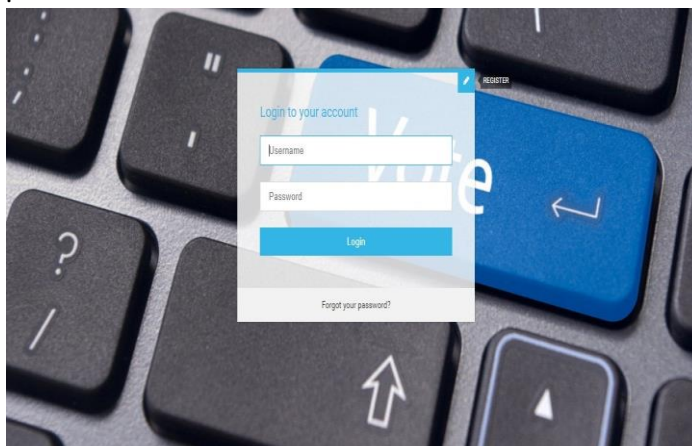


System architecture has this major blocks

- Secure Login System for admin and voter
- Documents Management (Admin)
- Voting Process for Voting
- Voting Results Publication after voting

Secure Login System for admin and voter

Login Interface of "Admin Login". Input Form Design The administrator from his login page creates wards, polling units as well as offline voter registration which constituted the major input forms. Processing of electoral forms. Simultaneous addition and deletion process Maintain electoral rolls. In case of deletion, proper records of deletion, notices are generated, issued and notice served details captured. Simultaneous addition and deletion process

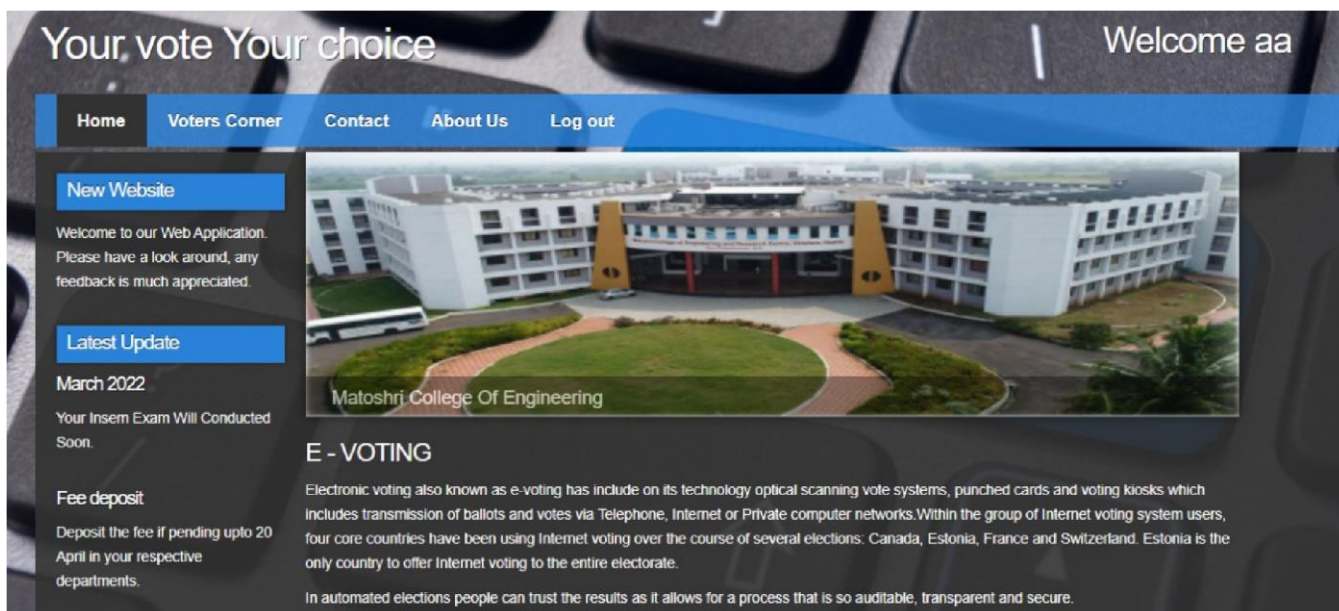


Voting Process for Voting

Party block voting, also known as the general ticket, in an election where each voter may vote for a party and that party wins all seats. Voting bloc, group of voters who co-ordinate their voting behaviour. When people cast their vote, they are actually voting for a group of people called electors. The number of electors each state gets is equal to its total number of Senators. Block-chain technology came into the ground to overcome these issues and offers decentralized nodes for electronic voting and is used to produce electronic voting systems mainly because of their end-to-end verification advantages.

Documents Management (Admin)

The system is giving the option if you want to store your all related documents at one place.



#### Voting Results Publication after voting

After a successful vote-cast, it is mined by multiple miners for validation following which valid and verified votes are added into public ledger. The security considerations of the votes are based on Block-chain technology using cryptographic hashes to secure end-to-end verification. To this end, a successful vote cast is considered as a transaction within the Block-chain of the voting application. Therefore, a vote cast is added as a new block (after successful mining) in the Block-chain as well as being recorded in data tables at the back-end of the database. The system ensures only one-person, one-vote (democracy) property of voting systems. Therefore, a vote cast is added as a new block (after successful mining) in the Block-chain as well. This is achieved by using the voter's unique thumbprint, which is matched at the beginning of every voting attempt to prevent double voting. A transaction is generated as soon as the vote is mined by the miners which is unique for each vote. If the vote is found malicious it is rejected by miners.

#### V.CONCLUSION

The idea of adapting digital voting systems to make the public electoral process cheaper, faster and easier, is a compelling one in modern society. Making the electoral process cheap and quick, normalizes it in the eyes of the voters, removes a certain power barrier between the voter and the elected official.

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