E-VOTING SYSTEM USING BLOCKCHAIN

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ABSTRACT

Online voting is a trend that is gaining momentum in modern society. It has great potential to decrease organizational costs and increase voter turnout. It eliminates the need to print ballot papers or open polling stations—voters can vote from wherever there is an Internet connection. Despite these benefits, online voting solutions are viewed with a great deal of caution because they introduce new threats. A single vulnerability can lead to large-scale manipulations of votes.

Electronic voting systems must be legitimate, accurate, safe, and convenient when used for elections. Nonetheless, adoption may be limited by potential problems associated with electronic voting systems. Blockchain 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.

This technology is a beautiful replacement for traditional electronic voting solutions with distributed, non-repudiation, and security protection characteristics. The following article gives an overview of electronic voting systems based on blockchain technology. The main goal of this analysis was to examine the current status of blockchain-based voting research and online voting systems and any related difficulties to predict future developments. This study provides a conceptual description of the intended blockchain-based electronic voting application and an introduction to the fundamental structure and characteristics of the blockchain in connection to electronic voting.

INTRODUCTION

In each democracy, the protection of an election maybe a matter of national security. the pc security field has for a decade studied the probabilities of electronic choice systems, with the goal of minimizing the price of getting a national election, whereas fulfilling and increasing the protection conditions of an election. From the dawn of democratically electing candidates, the legal system has been supported pen and paper. commutation the normal pen and paper theme with a replacement election system is essential to limit fraud and having the choice method traceable and verifiable. Electronic choice machines are viewed as blemished, by the protection community, based totally on physical security considerations.

A blockchain could be a distributed, immutable, in-controvertible, public ledger. This new technology works through four main features:

1. The ledger exists in many different locations: No single point of failure in the maintenance of the dis-tributed ledger
2. .2. There is distributed management over United Nations agency will append new transactions to the ledger.

3. 3. Any projected “new block” to the ledger should reference the previous version of the ledger, making a changeless chain from wherever the blockchain gets its name, and so preventing meddling with the integrity of previous entries.
4. 4. A majority of the network nodes must reach a consensus before a proposed new block of entries be-comes a permanent part of the ledger

LITERATURE SURVEY

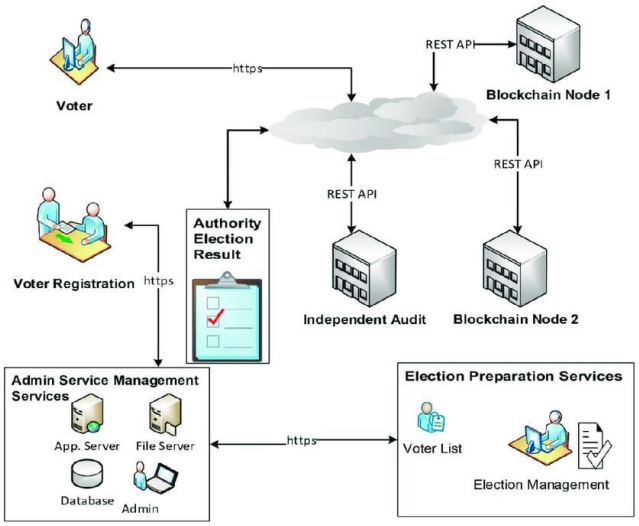
Increasingly digital technology in the present helped many people lives. Unlike the electoral system, there are many conventional uses of paper in its implementation. The aspect of security and transparency is a threat from still widespread election with the conventional system (offline).Block chain technology is one of solutions, because it embracesa decentralized system and the entire database are owned by many users.

There is no doubt that the revolutionary concept of the blockchain, which is the underlying technology behind the famous crypto currency Bitcoin and its successors, is triggering the start of a new era in the Internet and the online services. In this work, we have implemented and tested a sample e-voting application as a smart contract for the Ethereum network using the Ethereum wallets and the Solidity language.

Proof of stake protocol of block verification does not rely on excessive computations. It has been implemented for Ethereum and certain altcoins. Instead of splitting blocks across proportionally to the relative hash rates of miners (i.e. their mining power), proof of-stake protocols split stake blocks proportionally to the current wealth of miners. The idea behind Proof of Stake is that it may be more difficult for miners to acquire sufficiently large amount of digital currency than to acquire sufficiently powerful computing
equipment

PROPOSED SYSTEM

Tools used: Ganache & metamask.



- The simple rationalization could be a 'chain' of blocks. A block is associate degree mass set of information. knowledge square measure collected and methoded to suit in an exceedingly block through a process known as mining. every block may be known employing a science hash (also referred to as a digital fingerprint). The block shaped can contain a hash of the previous block, so blocks will kind a sequence from the primary block ever (known because the Genesis Block) to the shaped block. during this method, all the information may be connected via a connected list structure. No marker can have more than one 3D object associated with it.

CONCLUSION

The goal of this research is to analyse and evaluate current research on blockchain-based electronic voting systems. The article discusses recent electronic voting research using blockchain technology. The blockchain concept and its uses are presented first, followed by existing electronic voting systems. Then, a set of deficiencies in existing electronic voting systems are identified and addressed. The blockchain's potential is fundamental to enhance electronic voting, current solutions for blockchain-based electronic voting, and possible research paths on blockchain-based electronic voting systems.

FUTURE SCOPE

Many security flaws still exist in the internet and polling machines. Electronic voting over a secure and dependable internet will need substantial security improvements. Despite its appearance as an ideal solution, the blockchain system could not wholly address the voting system's issues due to these flaws. This research revealed that blockchain systems raised difficulties that needed to be addressed and that there are still many technical challenges. That is why it is crucial to understand that blockchain-based technology is still in its infancy as an electronic voting option.

7 Scope

The following improvements can be made to the system,

• Adding Aadhar number verification system.

• Linking application with Government voting system data.

• Making the system more secure.

• Enhancing the Graphical User Interface(GUI) of the ap-plication.

• Local languages can be included which will play a vital role for people living in rural areas as well as uneducated people.

• Also, adding suggestion system for voters that enables the public to give suggestions to the current winner.

• A complaint system can be included, that allows the people to file complaint against a candidate.

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