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Permitting Moderate People with Blockchain Voting Organization

Shivani Munde, Shantanu Sarode, Karan Tayalkar, Adil Ahamad Shaikh, Om Wasu, Prof. P. R. Sangole
Department of Civil Engineering
Dr. Rajendra Gode Institute of Technology & Research, Amravati, Maharashtra, India

Abstract: *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). General elections still use a centralized system, there is one organization that manages it. Some of the problems that can occur in traditional electoral systems is with an organization that has full control over the database and system, it is possible to tamper with the database of considerable opportunities. Structuring an electronic voting system which fulfills the legitimate requirements of representatives has been a challenge for a long time. Conducting the free, systematic and impartial election is the vital goal of every democracy nation. Every country follows a different voting system from old paper ballot system to Electronic voting system. There facing a many problem in these voting systems. The main problem is location and the accessibility, people are suffering to go to their native place polling booth for casting their vote. This needs to be considered as every people s vote plays significant role in deciding the right leaders. Blockchain technology offers the transparency and security requisites for the impartial election. It is a complete decentralized, immutable ledger system. The online voting system allows the voters to cast their vote from any place at any time which leads to increasing the voter participation count. The objective of is to create a voting system which provides transparency and security using Blockchain technology, the Ganache tool is used for setting up a local blockchain network. The metamask is used for account verification Blockchain technology is one of solutions, because it embraces a decentralized system and the entire database are owned by many users. Blockchain itself has been used in the Bitcoin system known as the decentralized Bank system. By adopting blockchain in the distribution of databases on e-voting systems can reduce one of the cheating sources of database manipulation. This research discusses the recording of voting result using blockchain algorithm from every place of election. Unlike Bitcoin with its Proof of Work, this thesis proposed a method based on a predetermined turn on the system for each node in the built of blockchain.*

Keywords: Blockchain, ethereum, smart contracts, e-voting, solidity

I. INTRODUCTION

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. However, it is not clearly for election administrator to show the public bulletin board can be completely trusted. Some people realize blockchain can be used as the bulletin board because the content is publicly trusted. The voting protocol is deployed on Ethereum by smart contract. The Ethereum script allows users to write the required smart contracts on Ethereum and implement powerful functions through smart contracts to implement decentralized applications. All nodes of Ethereum network run the contract code independently to ensure the credibility of the final result. The final result is public verifiable. The objective of the paper is to create a voting system which provides transparency and security using Blockchain technology. To explore the various available options in the blockchain technology and to choose the right platform to develop the voting system. With blockchain based voting, the

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voter turn up might also increase as people can cast their vote from any place at any time, making this as a perfect alternate to the current voting system

II. LITERATURE REVIEW

Technology is playing an essential role in providing solutions to worldwide problems. Likewise, it has played its part in Voting Systems. In 2011, a Webbased secure E-voting system with fingerprint authentication was developed, where the system administrator can define the election, party, village headman, polling clerks, and candidate details into the database also system administrator sets the election timings. The village headman is responsible for registering the electors with their fingerprints. Polling clerks can start the election in their authenticated areas. Electors cannot vote before the start timing of the election, also electors' would be authenticated for election based on their fingerprint match with already registered fingerprints in the database, and the voter can vote once only. The election process can be finished by the system administrator and the election results relevant to the region would be shown after the end of the election process. In traditional voting systems, the ratio of voters is decreasing day by day therefore in 2015, the idea of an E-Voting System using mobile SMS was proposed named "Mobile-Electronic voting machine (M-EVM) or Modified Electronic voting machine(MEVM)" First for those who don't have mobile phones, for them the solution is an old traditional system but another mode is for those who have mobile phones which is the necessary condition for using M-EVM. For successful voting using M-EVM, the voter name concerning his/her mobile number must be registered in the EVM database. Voters can vote for the specific candidate by sending the message in the required format and the result M-EVM would acknowledge the voter about the vote. After voting that person would be blocked from the list after that voter cannot vote again. In this system, all registered mobile numbers will be informed about the results of the election after the 1 hour of voting. Another research presents, Blockchain-based Electronic Voting System (EVS) to prevent the security threats occurring at normal EVS and ballot voting which ensures transparency that even the Election Commission can't view whom the voter voted for. As the blockchain is immutable, no one can change or temper the vote once it is cast. To keep the confidentiality of data the concept of Trusted Third Party (TTP) is used, which acts as an intermediary between a voter and Election Commission to authenticate and validate voters for casting votes anonymously without security hazards. The system is multi-chain and is capable of restricting multiple vote casting per voter. Every voter has to register himself before voting starts, for which the voter has to submit their aadhar database. During voting, the voter has to submit their aadhar database i.e. fingerprint. Aadhar data is secured using cryptography to the Election Commission to make sure the voter is valid and upon validation, the voter would be navigated to the voting module.

III. ANALYSIS OF PROBLEM

Current voting systems like ballot box voting or electronic voting suffer from various security threats such as DDoS attacks, polling booth capturing, vote alteration and manipulation, malware attacks, etc. and also require huge amounts of paperwork, human resources, and time. This creates a feeling of doubt among existing frameworks. Utilizing blockchain, casting a ballot interaction can be made safer, straightforward, permanent, and solid. Blockchain is an innovation that is quickly picking up speed in period of industry 4.0. With high security and straightforwardness arrangements, it is overall broadly utilized in store network the executive's frameworks, medical services, installments, business, IoT, casting a ballot framework, and so forth. Another case if hacking of databases. If system is integrated with blockchain- a special property called immutability protects system. Consider SQL, PHP, or any other traditional database systems. You can insert, update, or delete votes. But in a blockchain you can just insert data but cannot update or delete. Hence when you insert something, it stays there forever and no one can manipulate it- Thus name immutable ledger.

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Gas Cost and Time Analysis

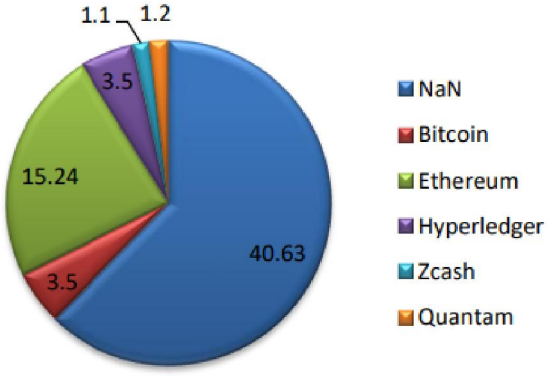

Fig 1: Gas Cost and Time Analysis

Blockchain systems allow the development of blockchain-based applications. Bitcoin, Ethereum, Hyperledger and R3 Corda are the most renowned blockchain frameworks. We tried to find out which systems are mostly preferred for analyzing the details of the selected papers. However, we found that most of the papers containing general definitions and there were insufficient information on the technical implementation details. Many of the studies tackle the overall idea of blockchain based e-voting and general issues affiliated with it. There seems to be a general consensus on the idea that blockchain can be applied in e-voting systems. However, technical details and implementation proposals are not explicitly stated. Nevertheless, based on the studies the blockchain platform usage distribution can be seen in Figure.

IV. FUTURE WORK

In future work, we will continue on the further implementation or changes in our system and we will try to research on its further performance. However, there are still some implementation that can be applied to our system. Basically our focus is on the development of more efficient and sophisticated system for E-voting using blockchain technology and its related variable tools.

V. CONCLUSION

This paper provides an Electronics voting system which is deployed on Ethereum network. Many research works proved that the block chain technology helps in improving the existing system hence it also provide a better way to conduct the Election. It also used to evade the drawbacks of centralized voting systems.

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