iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** VI **Month of publication:** June 2022

DOI: https://doi.org/10.22214/ijraset.2022.44702

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

E-voting System Using Block-Chain

Yutesh Mohadikar[1], Sumedh Wasnik[2], Sarthak Malpani[3], Abhilasha Lokhande[4], Ashwini Shinde[5], Priya Sudewad[6]
[1, 2, 3, 4, 5, 6]*Walchand College of Engineering, Sangli, India*

Abstract: ***This paper presents the E-voting system using block chain, which is a multiplatform interface designed to cast votes which promises secure and transparent elections. The block chain provides a doubly linked hash structure of every vote cast, hence any tempering to it results in a new different structure so we can say that the links are immutable. Every vote cast is counted as a transaction with a unique hash address. A collection of rules known as smart contract is stored on block chain to speed the transaction. At the end, the total number of transactions are counted which turns out to be the actual results of the elections. This unique combination allows secure and user-friendly experience to the users at the same time.***
Index Terms: Block chain, hash, vote, transaction.

I. INTRODUCTION

An easy-to-use electronic voting mobile application thatallows for safe, secure, and transparent elections. Only onevote may be cast per user. The results are shown in real-time.The e-voting system guarantees the following characteristics: A voter may only vote if he or she has been authorized. Each voter can cast only one vote (Uniqueness). Votes must be recorded accurately (Precision). The integrity of the votingsystem requires that no change or loss of voting data take placethat could compromise the integrity of the system. Systemsshould be designed in such a way that they can remain stableafter failures and loss of Internet access. A convenient systemthat requires a limited amount of skill. Block chains aredistributed ledgers that are immutable, and incontrovertible. Since the distributed log exists in many places, there is no anypoint of breakdown in its maintenance. The United Nationshas distributed management as transactions are added to theledger. In order to avoid tampering with earlier entries, anyproposed "new block" adds a reference to the previous ledgerversion, creating a fixed chain from anywhere the block chain gets its name. Before a latest block of arrival is permanentlyadded to the ledger, maximum part of the network nodesshould come to a consensus.

II. LITERATURE SURVEY

Various techniques and methodologies are used to make changes in electronic and online voting systems. The security of the system may be guaranteed to some extent by some of them, but the voting data and process still should be controlledand managed by ultra-modern structure that ensure and guarantee the confidentiality of the electorate and information about the electorate.
Usual approaches for E-voting: Various cryptographic techniques are used to ensure the security of thedata activity in systems that are developed to conduct votingusing connected gateways and computerized machines.

A. Homomorphic Encryption Technique:

In addition to being a powerful technique with many applications, homomorphic encryption has been around for quite some time. Online voting is an example of its use recently. With this encryption, the voting system uses the exponential El Gamal cryptosystem. Using the exponential ElGamal encryption, the details of every vote cast in the ballot are ciphered before submission. Because of this crypto system's additive homomorphism property, ciphered ballots can be computed straight without being decrypted.

B. Centralized architecture:

The data is, however, converted into a coded format in order to prevent manipulation while being sent over the network. Having the correct data in the database also requiresa high level of trust and security after the correct data are stored. As long as the data is regarded as valuable, centralized storage is inconvenient since unauthorized access or hacker attacks will undermine the system's reliability.

III. METHODOLOGY

Firstly, we are going to do the registration process which will add the user to database and admin will approve the addition to the data base and each time the user tries to login it will first check the database about the voter then grant the access. We are going to Recognition devices & valid identity card number to cross check whether the user is present in the database or not /whether he is eligible to vote or not.

©IJRASET: All Rights are Reserved

After that, a unique hash address is given to the voter using which he can cast a vote. Each hash is supplied with Ethers by which he can cast vote once. On the voting day, voter will be given the election code and he/she will login using the credentials and it will verify whether it is the valid user and then using the address given to him he/she will cast a vote then he will be automatically logged out. The voters will also get live status of voting.

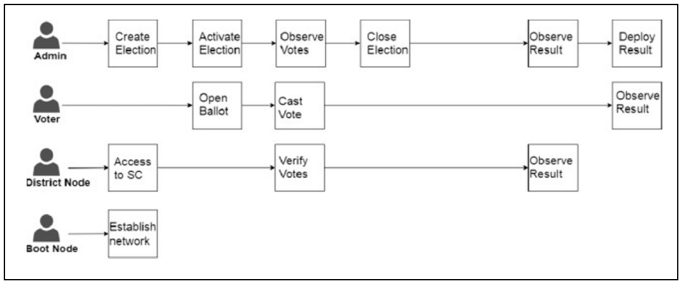


Fig. 1 Electronic voting system using block chain smart contract skeleton.

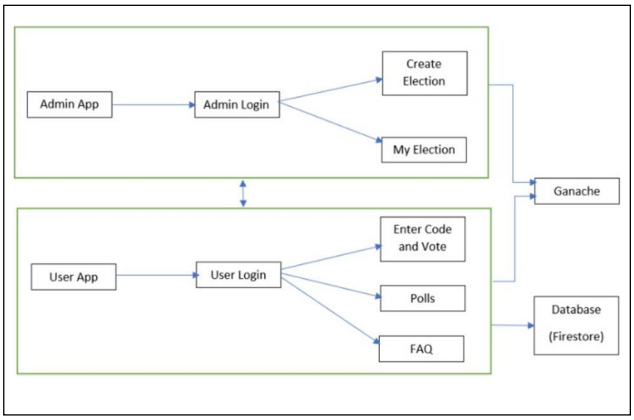
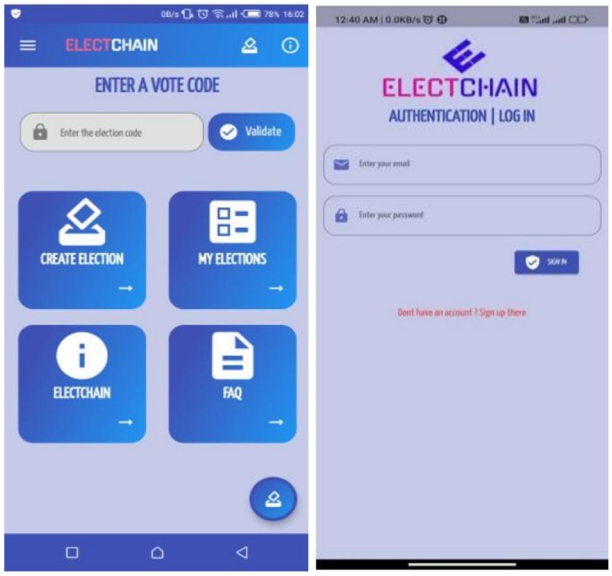
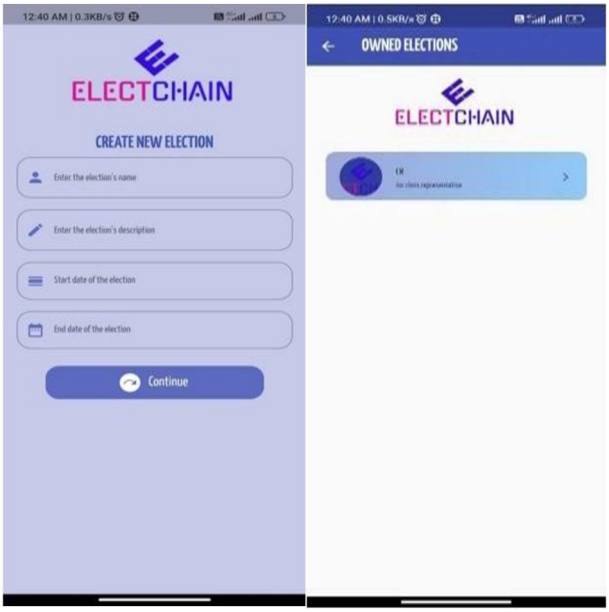


Fig. 2 Flow Chart of the Application

IV. RESULTS OBTAINED

Below are some snapshots of the app created. We have different apps for admin and user login as shown below.





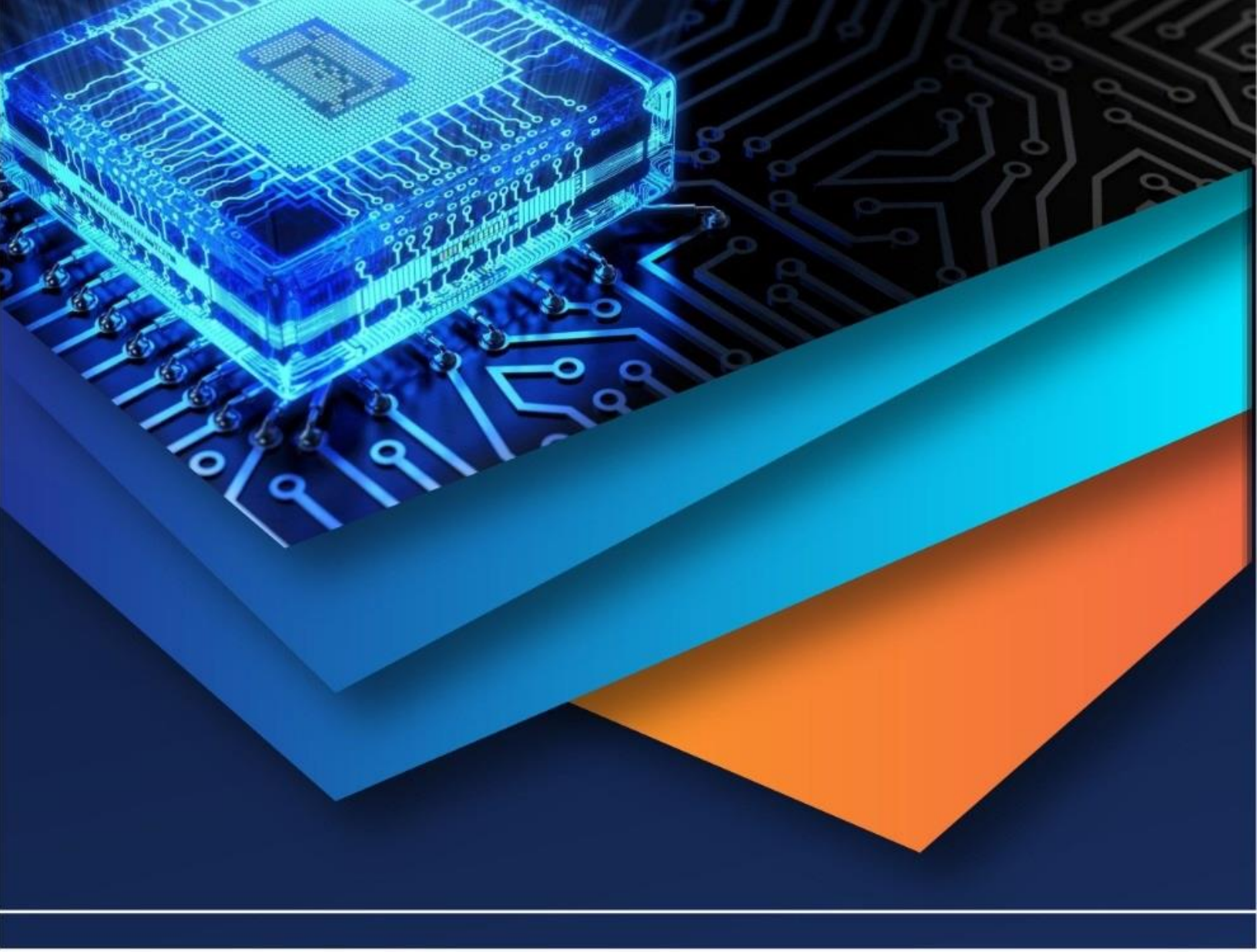
The final application accurately tells the winner after the voting. It is secure and hence nobody can hack the software. Nobody is able to alter the outcomes of the voting. Voter data and details of voter's choice is secured and is not accessible by unauthorized person.

V. CONCLUSION

A block chain based electronic voting system was examined in this paper, and its advantages compared with traditional voting methods were discussed. Choosing the right leader for the country is crucial for a country with a low voting percentage The proposed system provides secure data and makes E-voting trustworthy amongst citizens of a democracy. Bitcoin's decentralized system of banks is based on the blockchain technology. The adoption of block chain in the distribution of databases on e-voting systems reduces cheating sources Information about voters and their choices will be secure so they cannot be accessed by unauthorized persons. Ultimately, the software will be secure so that no one can hack it.

REFERENCES

[1] Mohammad Hosam Sedky and Essam M. Ramzy Hamed, "A Secure e- Government's e-Voting System".
[2] Himanshu Agarwal and G. N. Pandey, "A Secure eGovernment's e- Voting System".
[3] Prof. Anita A. Lahane, "Blockchain technology-based e-voting system".
[4] Rockwell, M. (2017) "Bitcongress – Process for block voting and law", http://bitcongress.org/ last accessed: December 2017.
[5] Rura L., Issac B., and Haldar M. K. (2016) "Implementation and evaluation of steganography based online voting, International Journal of Electronic Government Research"
[6] Multichain (2017) Open platform for blockchain applications. Available at: www.multichain.com last accessed: December 2017.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)