A Survey Paper Voting Application Using Blockchain Technology

Parmeshwar Hale[1], Yogesh Mandlik[2], Harshal Dhapate [3], Mangesh Ohol [4], Prof. Supriya Agre[5]

[1,2,3,4,5] *Department of Computer Engineering, Dhole Patil College of Engineering, Pune, India*

ABSTRACT –

Electronic voting (also known as e-voting) refers to voting using electronic means and to take care of the votes given by the user and counting the votes accurately. An e-voting system must be secure, as it should not allow duplicated votes and be fully transparent, while protecting the privacy of the attendees. The disadvantages of traditional voting system are that there is no reliability of voting. No assurance that people gave the votes are not changed before they are counted on the system. There is no transparency between the voter and the system. So, to overcome all these issues we are proposing to use block chain technology as a medium in the voting system. The objective of such a scheme would be to provide a decentralized architecture to run and support a voting scheme that is open, fair, and independently verifiable. In this, we propose a potential new e-voting protocol that utilizes the block chain as a transparent ballot box. Therefore, there would be more transparency between the user and the system. The advantages that we get while using the e-voting system would be to reduce election expenses including material, logistics and salary cost. People's opinion would be more public and more accessible by politicians and managers. If the voter is out of station, he can vote remotely. So, it strengthens the overall attendance.

I. INTRODUCTION

The implementation and related performance measurements are given in the paper along with the challenges presented by the block chain platform to develop a complex application like e-voting.The paper highlights some shortcomings and presents two potential paths forward to improve the underlying platform (block chain technology)to support e-voting and other similar applications. Block chain technology has a lot of promise; system in its current state it might not reach its full potential. There needs to be concerted effort in the core block chain technology research to improve its features and support for complex applications tha can execute within the blockchain network efficiently and effectively.

II. LITERATURE REVIEW

System presented in the Issues and Effectiveness of Blockchain Technology on Digital Voting that block chain is a technology that enables moving digital coins or assets from one individual to other individual.[1] System presented in the Electronic voting machine based on Blockchain technology and Aadhar verification that A nation with less voting percentage will struggle to develop as choosing a right leader for the nation is very essential.[2]An E-Voting Protocol with Decentralisation and Voter Privacy that a potential solution to the lack of interest in voting amongst the young tech savvy population. For e-voting to become more open, transparent, and independently auditable, a potential solution would be base it on block chain technology.[3] System presented in the secure end-to-end verifiable e-voting system using zero knowledge based blockchain that present a cryptographic technique for an authenticated, end-to-end verifiable and secret ballot election.[4]

III. PROPOSED SYSTEM

The system contains following modules:

1) Admin

2) Voting

3) Block Generation and blockchain validation

4) Consensus Algorithm validation and block chain recovery

5) Results Generation

This system highlights the implementation of e-voting system using blockchain for such a proposal from a practical point view in both development/deployment and usage contexts. Concluding this work is a potential roadmap for blockchain technology to be able to support complex applications. In the system carried out voting system for online user, where end user easily access the system and make the voting without using any third

party validation. The system cant be generate any high level hardware configuration requirement, it possible to make vote using traditional configuration. The able to perform the voting without any hardware device with drastic security manner. In this data is processed in multiple servers so the transactions are processed in sequencing P2P distributed network. This illuminates the quality of service issue and time limits. This is a middleware system in which the processing environment in which the load will be balanced using threads. The request generated will be parallelly saved on all nodes in a Blockchain manner. We use the Hash generation algorithm and the Hash will be generated for the given string. Before executing any transaction, we use peer to peer verification to validate the data. If any chain is invalid then it will recover or update the current server blockchain. This will validate till the all nodes are verified and commit the query. Mining algorithm is used for checking the hash generated for the query till the valid hash is generated.
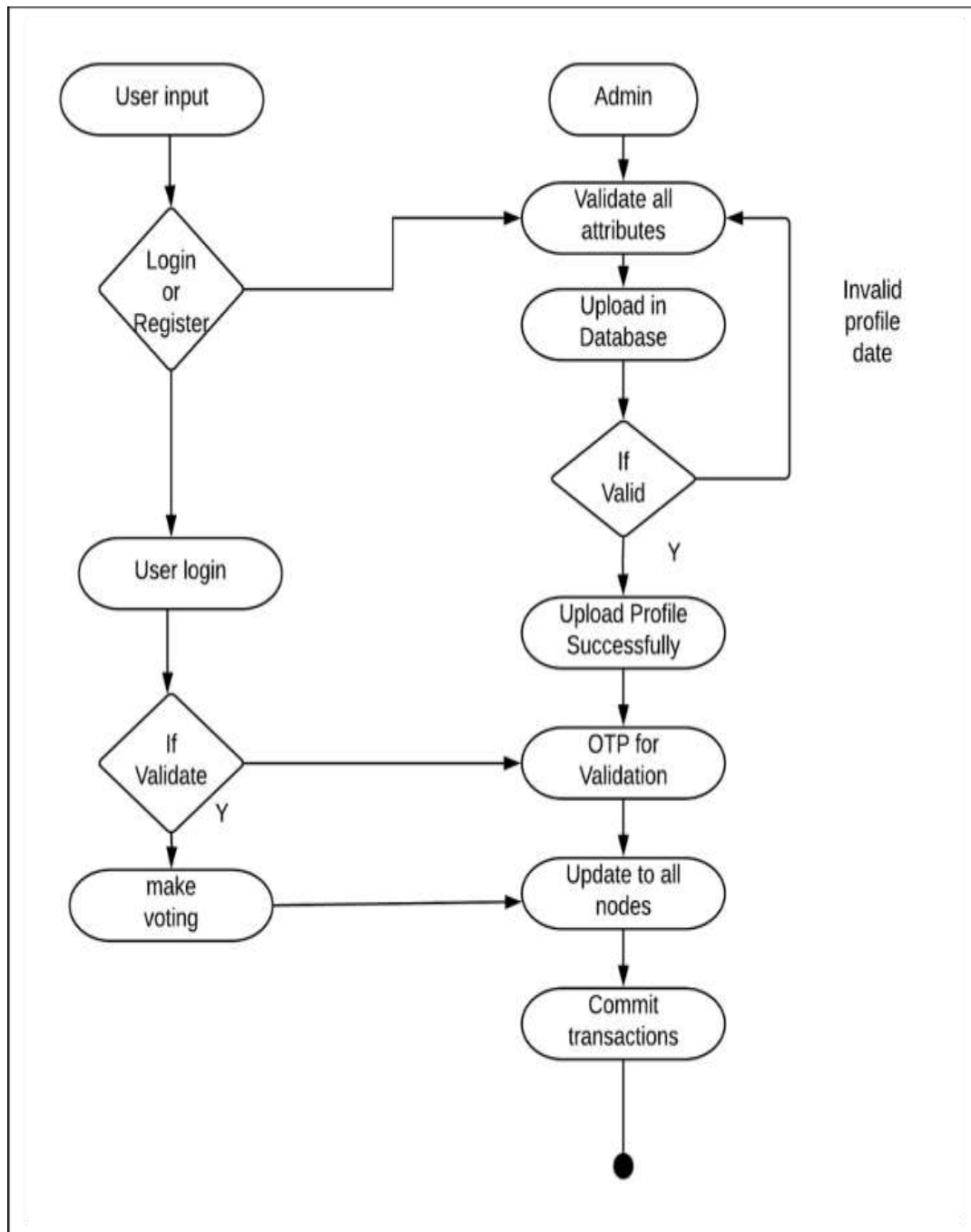
IV.DATA FRLOW DIAGRAM
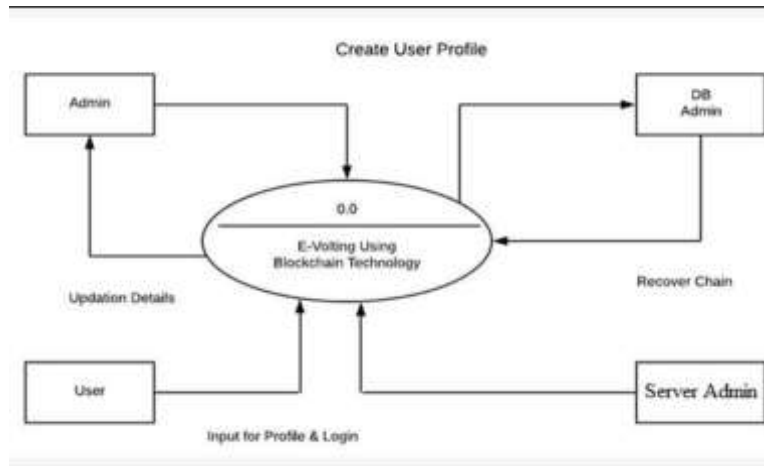
## V. USE CASE DIAGRAM
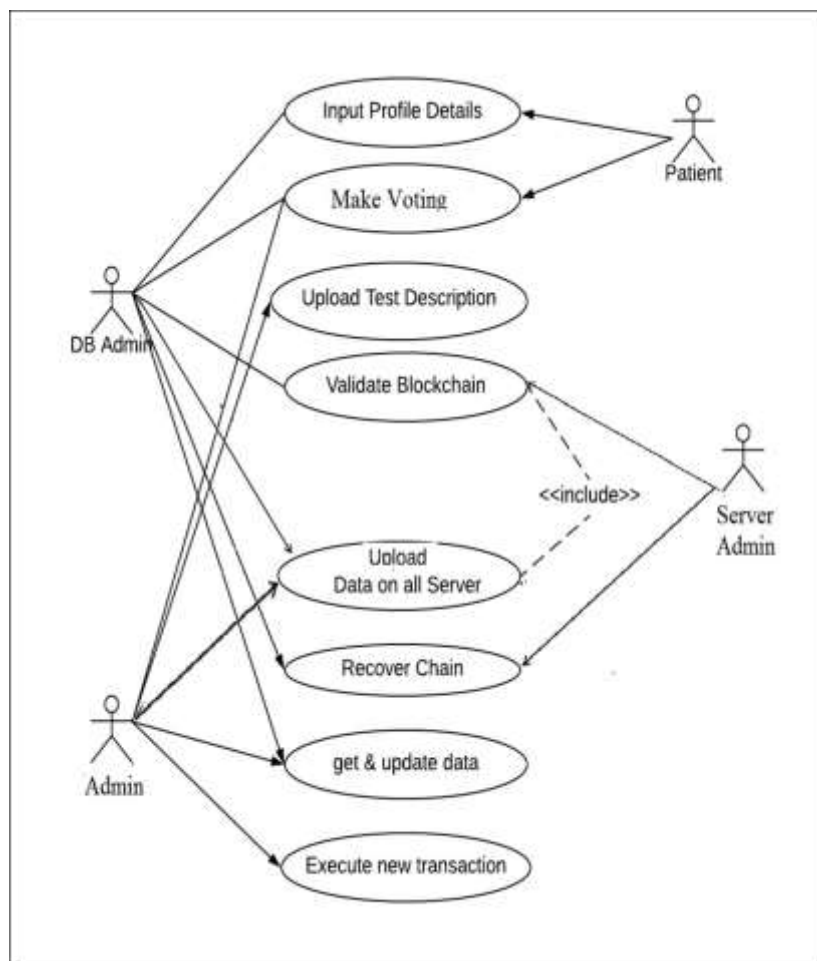
VI. ACTIVITY DIAGRAM

VII. ANALYSIS MODEL

The waterfall model is a classical model used in system development life cycle to create a system with a linear and sequential approach. It is termed as waterfall because the model develops systematically from one phase to another in a downward fashion. An effective System Development Life Cycle (SDLC) should result in a high-quality system that meets customer expectations, reaches completion within time and cost evaluations, and works effectively and efficiently in the current and planned Information Technology infrastructure. System Development Life Cycle (SDLC) is a conceptual model which includes policies and procedures for developing or altering systems throughout their life cycles. SDLC is used by analysts to develop an information system.

- Develop an information system. SDLC includes the following activities: Requirements
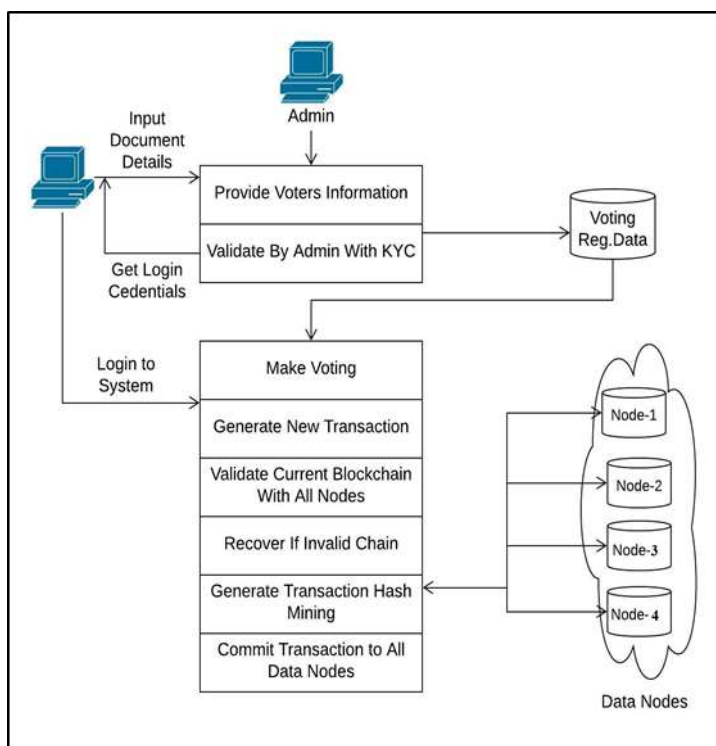
- Design

- Implementation

- Testing

- Deployment

- Operations

- Maintenance
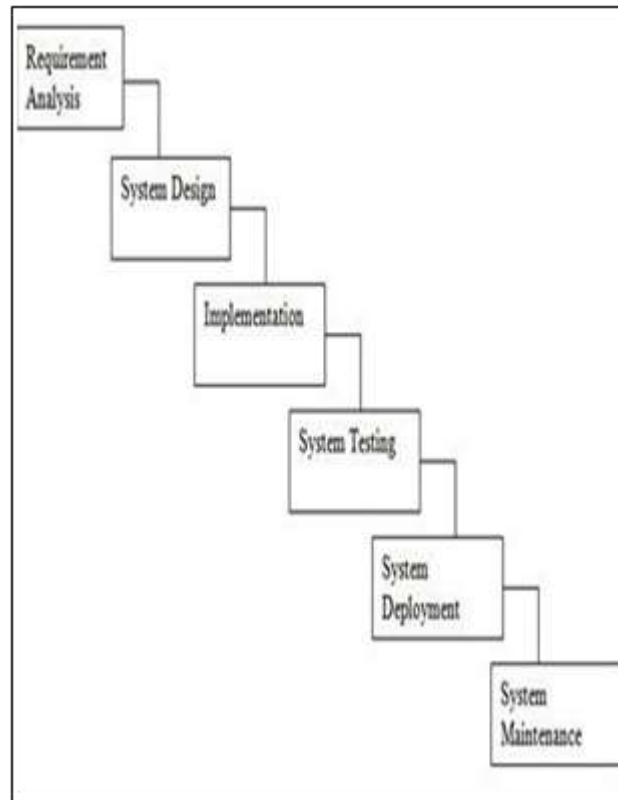
VIII.SEQUENCE DIAGRAM
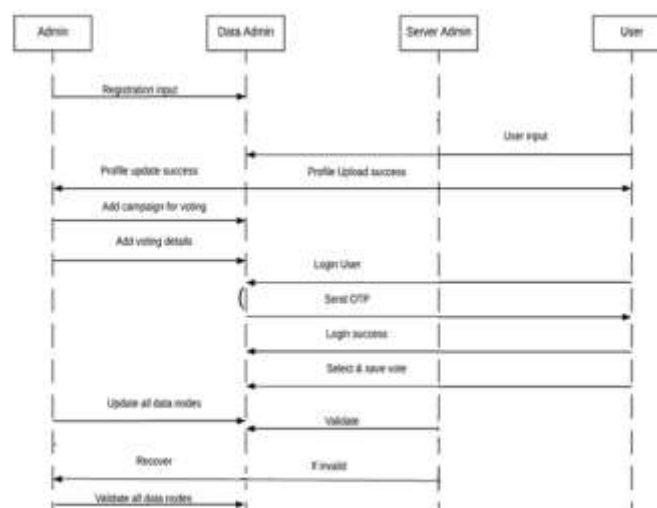
IX. SYSTEM ARCHITECTURE

X. CONCLUSION

There are many research directions in applying Blockchain technology to the voting industry due to the complexity of this domain and the need for more robust and effective information technology systems. An interoperable architecture would undoubtedly play a significant role throughout many voting use cases that face similar data sharing and communication challenges. From the more technical aspect, much research is needed to pinpoint the most practical design process in creating an interoperable ecosystem using the Blockchain technology while balancing critical security and confidentiality concerns in healthcare. Whether to create a decentralized application leveraging an existing Blockchain, additional research on secure and efficient software practice for applying the Blockchain technology in voting is also needed to educate software engineers and domain experts on the potential and also limitations of this new technology. Likewise, validation and testing approaches to gauge the efficacy of Blockchain-based voting architectures compared to existing systems are also important (e.g., via performance metrics related to time and cost of computations or assessment metrics related to its feasibility). In some cases, a new Blockchain network may be more suitable than the existing Blockchains; therefore, another direction may be investigating extensions of an existing Blockchain or creating a voting Blockchain that exclusively provides health-related services.

XI. ACKNOWLEDGMENT

XII. REFERENCES

1. Gupta A, Patel J, Gupta M, Gupta H., (2017), Issues and Effectiveness of BlockchainTechnology on Digital Voting. International Journal of Engineering and Manufacturing Science, Vol. 7, No. 1

2. Navya A., Roopini R., SaiNiranjan A. S. et. Al, Electronic voting machine basedon Blockchain technology and Aadhar verification, International Journal of Advance Research, Ideas and Innovations in Technology, (Volume 4, Issue 2)

3. Hardwick, Freya Sheer, Raja NaeemAkram, and Konstantinos Markantonakis. "E-Voting with Blockchain: An E-Voting Protocol with Decentralisation and Voter Privacy." arXiv preprint arXiv:1805.10258 (2018).

4. Meter, Christian. "Design of Distributed Voting Systems." arXiv preprint arXiv:1702.02566 (2017 5. Panja, Somnath, and Bimal Kumar Roy. "A secure end-to-end verifiable e-voting system using zero knowledge based blockchain."

5. Meter, Christian. "Design of Distributed Voting Systems." arXiv preprint arXiv:1702.02566 (2017 5. Panja, Somnath, and Bimal Kumar Roy. "A secure end-to-end verifiable e-voting system using zero knowledge based blockchain."

6. Martin A Makary and Michael Daniel. Medical error-the third leading cause ofdeath in the us. BMJ: British Medical Journal (Online), 353, 2016

7. Paul Tak Shing Liu. Medical record system using blockchain, big data and tokenization. In International Conference on Information and Communications Security, pages 254–261. Springer, 2016.

8. Christian Decker and Roger Wattenhofer. Information propagation in the bitcoin network. In Peer-to-Peer Computing (P2P), 2013 IEEE Thirteenth International Conference on, pages 1–10. IEEE, 2013.

9. Till Neudecker, Philipp Andelfinger, and Hannes Hartenstein. Timing analysisfor inferring the topology of the bitcoin peer-to-peer network. In Ubiquitous Intelligence Computing, Advanced and Trusted Computing, Scalable Computing and Communications, Cloud and Big Data Computing, Internet of People, and Smart World Congress (UIC/ATC/ScalCom/CBDCom/IoP/SmartWorld), 2016 Intl IEEE Conferences, pages 358–367. IEEE, 2016.