



ELECTION VOTING

USING BLOCKCHAIN TECHNOLOGY

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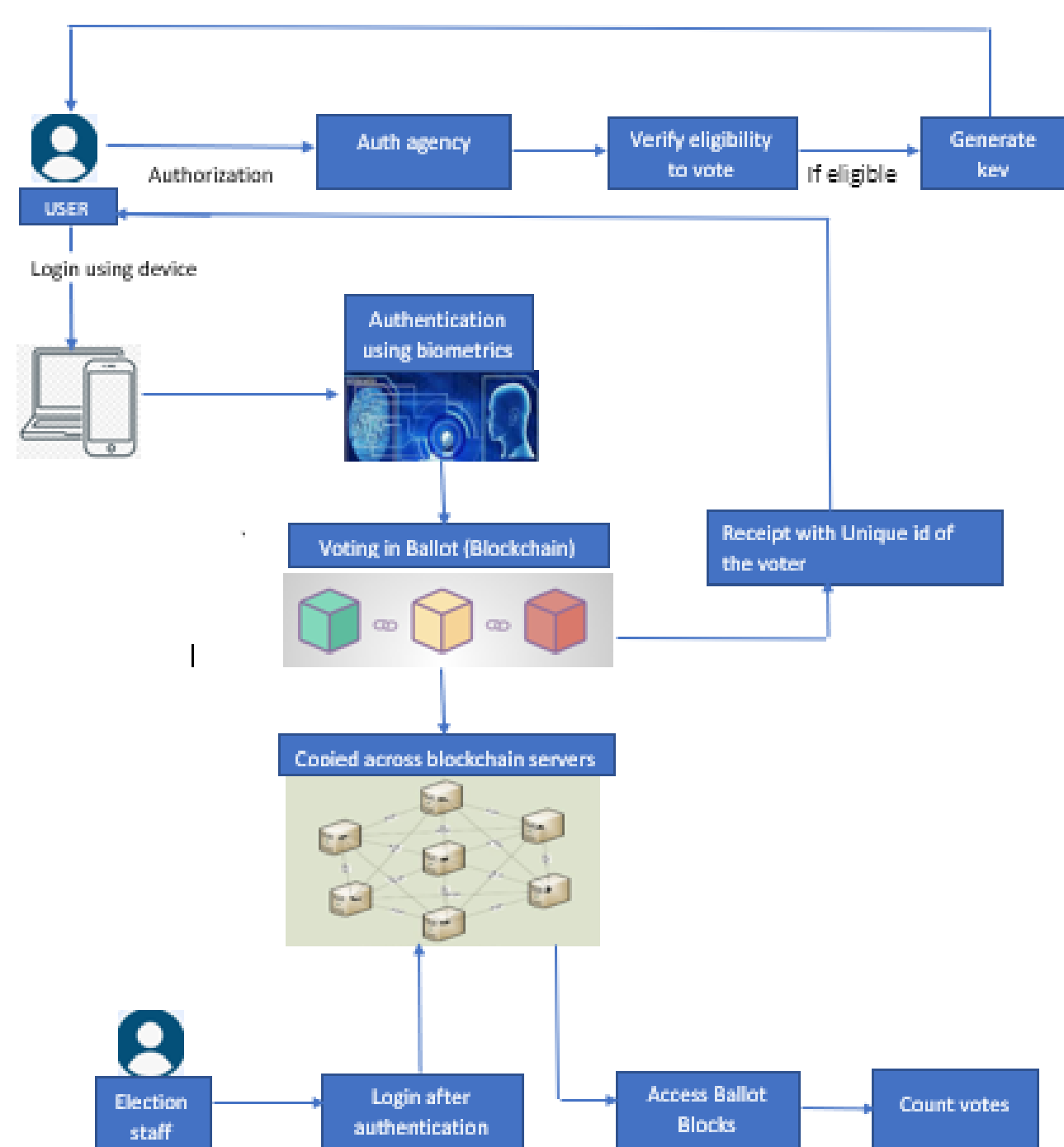
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Abstract:

The process after casting the votes has always remained uncertain. We know for a fact that there are a lot of malicious and illegitimate practices surrounding the voting system and election results. This paper proposes a method using decentralized blockchain technology, in which voting data are distributed over many servers, where it's harder to destroy or alter results. Also the government and the voters would have better transparency and can be assured that the votes are not tampered. Blockchain technology in voting application could be safe, secure and efficient.

Architecture:

The proposed architecture is to collect and distribute the vote data to many servers whose integrity is ensured by cryptographic hash algorithms, provides transparency for every node within the network. The user must Log into the application or website. Voter is required to fulfill the necessary Authorization procedure where the authorization agency verifies for the eligibility to vote and generates a key. The key will be used by the voter to login to voting system and goes through the mandatory authentication process, where the identity of the voter is verified using biometric system. Voter can cast the vote which will be stored in block. The votes are saved across multiple blockchain servers. As a confirmation the voter receives a receipt with unique id for the vote casted.



The election staff can log into the system after the authentication process, access the ballot and count the vote. The voter can also check the ballot(block) and verify for themselves if the vote was cast as intended. The voter can also audit each ballot in the ballot box and confirm if the Election results are accurate.

Working of Blockchain Technology:

The blockchain stores the results in growing list of records called blocks. Each block contains a cryptographic hash of previous block, a timestamp and transaction data. Each block includes the cryptographic hash of the prior block in the blockchain, linking the two. The linked blocks form a chain. A blockchain database is managed autonomously using a peer-to-peer network and a distributed timestamping server and is resistant to modification of the data. By storing data across its peer-to-peer network, the blockchain eliminates a number of risks that come with data being held centrally.

Conclusion:

The proposed model in this paper achieves Secured and convenient way in casting the votes and vote transparency which is pivotal in online voting system. This results in block chain technology having an upper hand in performance, as it helps in lowering the uncertainties about voting. The voters will have the convenience of casting votes from anywhere around the world, which also ensures maximum participation of people in voting from the comfort of their home, without having to compromise on security, which would work perfect for our generation.