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A Framework to Make Voting System Transparent Using Block chain Technology

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Abstract

A widespread scepticism in the traditional voting system, democratic voting in any country is vital. People's fundamental rights have been violated. Other digital voting systems have been called into question because of a lack of transparency. Most voting processes are not transparent enough, making it difficult for the government to acquire the trust of voters. The traditional and present digital voting systems are failing because they are easily exploited. The major goal is to remedy issues with the traditional and digital voting systems, which include any type of mishap or injustice throughout the voting process.

To ensure a fair election and decrease injustice, blockchain technology can be employed in the voting system. Physical voting methods have several flaws, while digital voting technologies are not yet perfect enough to be used on a broad basis. This assesses the necessity for a solution to ensure the people's democratic rights. This article introduces a platform based on modern blockchain technology that delivers maximum transparency and system stability in order to foster trust between voters and election authorities. The proposed technology provides a framework for conducting voting activity digitally via blockchain without the use of physical polling stations. Using _exible consensus techniques, our proposed system provides a scalable blockchain. The Chain Security Algorithm used in the voting system secures the voting transaction. While executing a transaction in the chain, smart contracts establish a safe connection between the user and the network. The blockchain-based voting system's security has also been explored. Furthermore,

encryption of transactions using cryptographic hashes and 51% attack prevention on the blockchain have been developed. Furthermore, the approach for carrying out. Blockchain has been used to create out blockchain transactions during the voting process. Finally, the suggested system's performance evaluation demonstrates that it may be implemented in a large-scale population.

OBJECTIVE OF THE PROPOSED SYSTEM:

The suggested system is a face-verified online voting system that employs block chain addresses for face verification. It assesses whether or not a specific voter is a valid voter based on his or her Block chain Address. It enables a specific person to vote online. The polling procedure continues until the voting period finishes, at which point the database on the server is updated. The Block chain Address is used by the Face Verification online voting system to acquire the complete details. about the voter. Furthermore, the votes are saved in a block chain server and are visible to the public, ensuring a trustworthy environment.

Introduction:

Currently, India's voting system is inefficient and open to outside threats; the only item that security checks is a voter ID card, which is easily falsified these days. It is slow, and manually counting votes can take a long time. Polling booths are captured and most ballots are destroyed in some rural locations where there is no security. As a result, the construction of an online system will eliminate these possibilities, and many votes can be saved using this system even if such situations occur. Most voting processes are not transparent enough, making it difficult for the government to acquire the trust of voters. The cause of traditional and modern systems' failure The traditional and modern digital voting systems are easily exploitable. The major goal is to remedy issues with the traditional and digital voting systems, which include any type of mishap or injustice throughout the voting process. To ensure a fair election and decrease injustice, block chain technology can be utilised in the voting system. Electronic voting has emerged over time as a replacement for paper-based voting in order to eliminate redundancy and inconsistency. According to the historical perspective offered during the last

two decades, it has not been as successful due to the security and privacy noticed over time. This study proposes a system for ensuring data security by utilising effective hashing techniques. This paper introduces the concepts of block formation and block sealing. The implementation of a block sealing concept aids in the adaptation of the block chain to the needs of the polling process. It is recommended to use consortium block chain, which assures that the block chain is held by a governing organisation (e.g., election commission) and that no unauthorised access may be made from outside. The framework suggested in this study covers the effectiveness of the polling process, the utility of hashing algorithms, the construction and sealing of contracts and blocks, data accumulation, and result declaration utilising the adjustable block chain approach. This paper claims to understand security and data management issues in block chain, as well as an improved manifestation of the electronic voting process.

Voting systems have progressed from counting hands to systems that use paper, punch cards, mechanical levers, and optical-scan devices. An electronic voting system, which is now widely utilised, has some characteristics that distinguish it from traditional voting techniques, as well as improved voting system qualities such as accuracy, convenience, flexibility, privacy, verifiability, and mobility. However, electronic voting methods have a number of problems, including time consumption, a significant volume of paper work, no direct role for higher officials, machine damage due to inattention, mass updates that do not allow users to update and change several items at the same time, and so on. As a result, we can prevent data loss by establishing a decentralised Block chain-based server architecture.

SYSTEM ANALYSIS EXISTING SYSTEM:

In India, this is the current voting method. This system uses electronic ballet to cast votes. In this, we voted in an electronic machine. This is a collection of counters and registers. This voting technique is quite basic. It provides advantages such as mobility, security, and flexibility to the electoral commission. However, in today's environment, everyone is so busy that they don't have time to vote. This paper offers a viewpoint on the electronic voting procedure.

This includes, but is not limited to, identifying the polling process, which is the actual voting mechanism employed on election day.

Disadvantage:

Among the issues with the current manual voting mechanism are the following:

Expensive and time consuming: The process of collecting data and entering this data into the database takes too long and is costly to conduct. For example, time and money are spent on printing data capture forms, preparing registration stations with human resources, and then advertising the days set for registration process, including sensitising voters on the importance of registration, as well as time spent on entering this data into the database.

Too much paper work: The method requires a lot of paper effort and paper storage, which is challenging as the population grows.

Short time allotted to access the voter registration: This is a major issue because not everyone has free time during the allotted time to review and update the voter register.

PROPOSED SYSTEM Advantage:

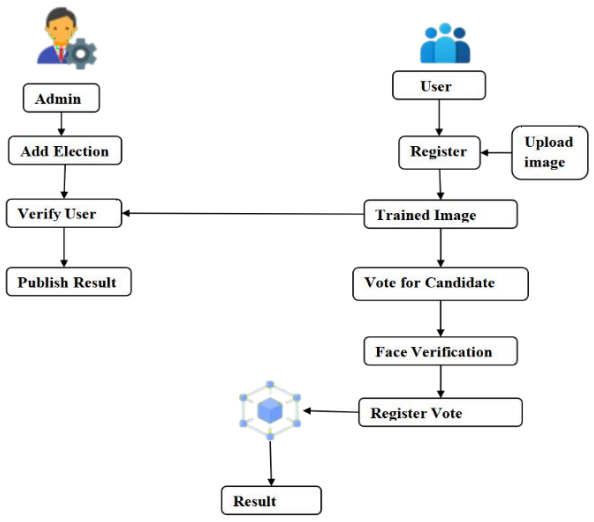
Voters can vote from anywhere in the country without visiting voting booths in a very secure manner.

This increases the voting percentage in India while decreasing the expense of the voting procedure.

Face Verification provides sufficient security, reducing the number of incorrect votes.

The findings are gathered from the stored data on the blocks via the considerable organisation of the nodes in the block chain.

Architecture Diagram:



Modules:

- User Registration & Trained Voter Face
- Create Election

- Voting
- Publish Result

Modules description:

User Registration & Trained Voter Face:

As an initial step, users should register on our website (User Voting Page Way) Block chain with their mobile name, email, aadhar id, Voter id, image Area, Block chain Address contact number, and a unique USER-ID. Users who have signed up for this portal are also considered voters. The voter image is transformed into a trained image. After successfully registration, the administrator verifies the voter information, and the user can access their profile using their USER-ID and registered password.

Admin:

The Admin Login page displays the default user name and password. Admin can accept or reject a voter request after validating the user's information. Admin can also register another admin. For the verification step, the user must scan his Aadhar card. After scanning, he should enter his information and submit a request to the administrator. If the account is rejected for any reason, the administrator will notify him to register again.

Create Election:

The Admin can create an election with a certain election type and constituency. At the specified date and time, all elections are initiated. And a verified user must login and scan his Block chain Address if the election and user constituency match before viewing election data. As well as the Block chain Address. To make a Nominated account in the block chain.

Voting:

Voters must have access to a web browser in order to vote. The voter interface would be given in English to make it accessible to all users. At the moment of voting, the suggested method can accommodate a high number of voters. A decentralised block chain system allows a voter to vote from any location on the planet. A person can vote from anywhere, including a foreign country, because his/her computerised National ID is confirmed from the national database, allowing him to vote. During the registration process, the user must face his registered finger. If the User Face matches, the voter must scan his face on the voting page. The voter must scan his or her face. If the User Face matches the

registered Face, the voter can vote for the correct candidate. KNN is the source. To compare two faces, an algorithm for human face recognition is utilised. Voting transactions are routed to a pool, where miners examine them and eliminate malicious requests by obtaining consensus from other nodes before adding them to the chain. A cryptographic hash is used to completely safeguard the votes. Each vote made results in the addition of a new block to the chain. When a voting transaction is completed and a node is successfully added to the Vote Chain, the voter is alerted through SMS to his registered email. The voter has supplied with a unique transaction hash by which he can validate his vote through a web portal and upon successfully completion of transaction the vote has been counted in the total voting activity.

Publish Result:

While executing a transaction in the chain, smart contracts provide a safe connection between the user and the network. These are the rules that apply to the entire Block chain and cannot be ignored under any circumstances. To successfully save the vote in the system, all nodes must adhere to the smart contracts. When a user completes the voting procedure, the votes are saved in the Block chain. As a result, the voter can be confident that his votes saved in the block chain cannot be modified. A pie chart retrieved from the block chain can be used by the user to view his or her vote.The SHA256 method was used to hash the data. After the election process is done, the administrator can publish the results for each constituency.

HARDWARE REQUIREMENTS

- Hard Disk : 80GB and Above
- RAM : 4GB and Above
- Processor : P IV and Above

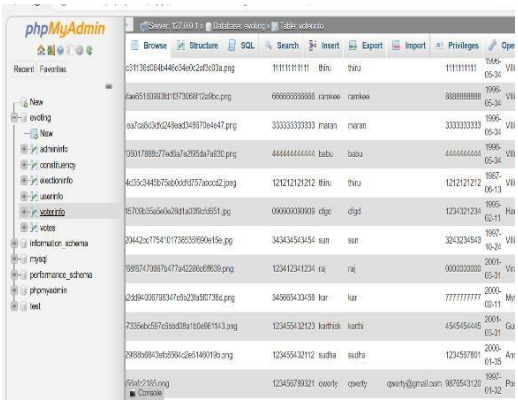
SOFTWARE REQUIREMENTS

- Windows 10 and above
- JDK 1.8
- Python 3.6.3
- XAMPP

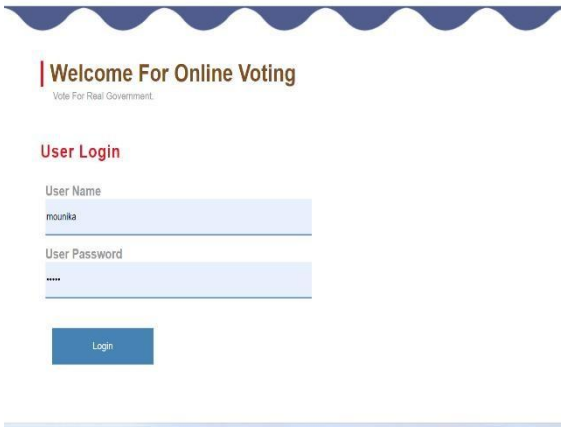
- GanaChe

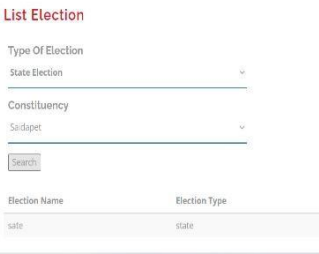
SCREEN SHOTS

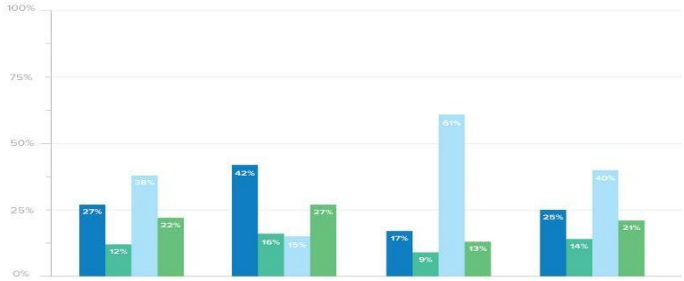
Execution starting of our application



User login







CONCLUSION:

The goal of presenting a blockchain-based solution for the voting system was to foster confidence between the government and voters, allowing them to think that their voting

integrity is protected. Blockchain-based voting makes the voting process more transparent and trustworthy. For the traditional voting system, the amount of money spent on voting activities in every country is very large, but the proposed alternative for using blockchain voting systems to make the voting process cheaper, faster, and more trustworthy. It improves people's relationships with their democratic state by providing them with a transparent framework on which they can rely and trust. The framework goes into detail about the features, services, and role of governmental authorities adopting blockchain in the voting system, which is desperately needed to increase the electoral system's dependability, traceability, and trust. Each vote is verified, making it unchangeable. The usage of hash ensures voter privacy, and the concept of public and private keys allows authorities to accurately regulate the process. The voting system's traceability aids in preventing hackers from altering or accessing voting information.

It ensures that each voter only casts one vote. This system's usability works well by utilising the more effective The concept of using a flexible consensus algorithm to lower the blockchain's significant computing needs. This clear behaviour of the system is encouraging for voters to rely on and trust. The Chain Security Algorithm is also included, which automatically verifies the chain's validity whenever a new block is added to it. Smart Contracts are critical in preventing any incomplete or fraudulent transactions in the blockchain voting system.

The suggested system provides authorities and voters with a secure, transparent, and dependable platform. Based on the performance evaluation of blockchain technology in VMS, the proposed framework has a promising result. The experiment demonstrates that the system maintains efficiency despite processing a huge number of transactions in the blockchain.

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