

Block Vote: Decentralized Voting System

Asst. Prof. S. S. Lad¹, Siddhesh Surve², Suraj Koli³, Saurabh Bajabale⁴,
Abhijit Jadhav⁵, Vinayak Deshmukh⁶

Assistant Professor, Department of Computer Science & Engineering¹

B. Tech Students, Department of Computer Science & Engineering^{2,3,4,5,6}

Adarsh Institute of Technology and Research Centre, Vita, Maharashtra, India

Abstract: *Due to the rapid growth of technology development, our daily life is heavily affected by smart systems, which facilitates our activities. For instance, online shopping grew up very fast. People are getting more used to online shopping, online auctions, etc., to purchase their interested products. This way of transaction has become the main trend and it brings great convenience to customers.*

Keywords: Voting System

I. INTRODUCTION

Democracy is built on the process of voting, whether it is done electronically or with a traditional ballot. Using technology to change the current voting process is imperative given the growing influence of technology on the nation's youth and the numerous irregularities present in the current system. However, the current voting system must meet a number of requirements in order for any new method to replace it. In order to minimize the costs involved in setting up the voting process and guarantee electoral integrity by meeting privacy, security, and compliance criteria, electronic voting has taken center stage in research. Introducing Block Vote, a decentralized voting application revolutionizing democratic processes. Built on blockchain technology, it ensures transparent, secure, and tamper-resistant elections.

1.1 Problem Statement

- Blockchain technology has the ability to create a tamper-proof and transparent platform for conducting e-voting.
- System provide secure, verifiable, and auditable voting procedures through the integration of cryptographic techniques and consensus protocols.

1.2 Objective

The main goal is to design and implement a Block Vote Decentralized Voting System that leverages Blockchain technology to address these challenges.

II. PROPOSED SYSTEM

A proposed system of block vote decentralized voting is a method that combines elements of blockchain technology with traditional block voting to create a secure, transparent, and efficient voting process. Here's an outline of how such a system might work. The blockchain is a distributed ledger maintained by a network of nodes, making it resistant to tampering and ensuring transparency. Once votes are recorded on the blockchain, they cannot be altered or deleted, ensuring the integrity of the voting process. All transactions (votes) are publicly accessible and verifiable, increasing trust in the system. Block voting allows groups or blocks of voters to cast a single vote that represents the majority decision of the group. Votes can be weighted based on the size or significance of the group, ensuring proportional representation.

III. RESEARCH METHODOLOGY

Research methodology for a Block Vote Decentralized Voting System typically involves a combination of qualitative and quantitative approaches to understand user preferences, behaviour, and satisfaction. Here's a basic outline of the steps involved:

IV. LITERATURE REVIEW

A study of the literature on decentralized voting applications would normally look at recent advancements and research in the area. It might address subjects including user identification, security methods, blockchain technology, and the possible benefits and drawbacks of decentralized voting systems. A thorough assessment would require references to credible political science and computer science sources, conference papers, and pertinent academic journals. The goal of a decentralized voting application is to improve voting systems' transparency and integrity. Blockchain technology is emphasized in the literature as being essential to safe and substantiable transactions in decentralized voting. Studies highlight the possibility of improved anonymity, less fraud, and enhanced trust. User acceptance and scalability concerns are among the difficulties. To solve these problems, recent research investigates a variety of consensus techniques including smart contracts.

Keywords and search parameters

- Technology Stack: Explore different Blockchain framework and their application in Voting System.
- Cryptographic Protocols: Investigate cryptographic techniques ensuring vote integrity and voter anonymity.
- Case Studies: Look for case studies and real-word implementations of blockchain-based voting

Challenges of Adoption and Implementation:

Blockchain network ,especially those based on proof-of-work like Bitcoin ,can struggle with scaling to handle large numbers of transactions quickly and efficiently .Even proof-of stake systems can face bottlenecks when scaled up to national election levels .Although Blockchain technology is inherit secure it is not immune to attack

V. ACKNOWLEDGEMENT

Casting a vote is not only the right of a citizen but also a responsibility of the citizen. The citizens of a country get an opportunity to vote for their representatives who will represent the needs and suggestions of citizens. These representatives are elected through the process called elections. The traditional electoral system necessitates the actual presence of the voter which causes discomfort to the physically challenged people. Also, there are chances of vote tampering. This paper discusses the proposed solution that will solve the above problems. Our proposed solution is to use an Online Voting System using Ethereum Blockchain. This web-based voting system helps the voters to vote from any location.

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