Secured Decentralized E- Voting System Using Blockchain

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1.Abstract

Online vote may be a trend that's gaining momentum in fashionable society. it's nice potential to decrease structure prices and increase numerical quantity. It eliminates the necessity to print ballot papers or open polling stations— voters will vote from where there's an online association. Despite these advantages, on-line vote solutions square measure viewed with an excellent deal of caution as a result of they introduce new threats. one vulnerability will result in large-scale manipulations of votes. Electronic vote systems should be legitimate, accurate, safe, and convenient once used for elections. nevertheless, adoption could also be restricted by potential issues related to electronic vote systems. Blockchain technology came into the bottom to beat these problems and offers decentralized nodes for electronic vote and is employed to provide electronic vote systems primarily as a result of their end-to-end verification benefits. This technology may be a stunning replacement for ancient electronic vote solutions with distributed, non-repudiation, and security protection characteristics. the subsequent article offers an summary of electronic vote systems supported blockchain technology.

Keywords:

High Accessibility, Immutability, Greater Liquidity.

2. INTRODUCTION

2.1 Purpose

In "E-VOTING SYSTEM" a voter can use his\her voting right online without any difficulty. He\She has to fill a registration form to register himself\herself. All the entries is checked by the DATABASE which has already all information about the voter. If all the entries are correct then a USER ID and PASSWORD is given to the voter, by using that ID and PASSWORD he\she can use his\her vote. If conditions are wrong then that entry will be discarded.

2.2 Scope

The scope of the project that is hosted on the server. There is a DATABASE which is maintained by the ELECTION COMMISION OF INDIA in which all the names of voter with complete information is stored.

2.3 Technologies to be used

This project will be a Web application to be developed in PHP having

* Front end (REACT.JS)

* Coding (SOLIDITY)

* Testing (GENACHE)

* Ethereum wallet (METAMASK)

* TRUFFLE

2.4 Overview

☐ Project is related to Online Voting System.

☐ The project maintains two levels of users: -

* Administrator Level

* Voter Level

3. BACKGROUND

ONLINE VOTING SYSTEM is a voting system by which any Voter can use his\her voting rights from any where in India. ONLINE VOTING SYSTEM contains-:

* Voter's information in database.

* Voter's Names with ID.

* Voter's vote in a database.

* Calculation of total number of votes.

4 . LITERATURE REVIEW

A study of resource availability that may affect the ability to achieve an acceptable system. This evaluation determines whether the technology needed for the proposed system is available or not.

4.1 Front-end and back-end selection

An important issue for the development of a project is the selection of suitable front-end and back- end. When we decided to develop the project we went through an extensive study to determine the most suitable platform that suits the needs of the organization as well as helps in development of the project.

The aspects of our study included the following factors.

4.2 Front-end selection:

1. It have a GUI that assists employees that are not from IT background. 2. Scalability and extensibility.

3. Flexibility.

4. Robustness.

5. According to the organization requirement and the culture.

6. Must provide excellent reporting features with good printing support. 7. Platform independent.

8. Easy to debug and maintain.

According to the above stated features we selected PHP as the front-end for developing our project.

4.3 Back-end Selection:

1. Multiple user support.

2. Efficient data handling.

3. Provide inherent features for security.

4. Efficient data retrieval and maintenance.

5. Stored procedures.

6. Popularity.

7. Operating System compatible.

5. METHODOLOGY

● List of project modules

● Deliverable(s)

● Expected number of days to complete

● Percent Completed

● User Authentication and authorization

● Asset management

● Wallet management

● Smart contracts

● Market place

● Compilance and regulation

● Testing and quality assurance

● Documentation

6 .IMPLEMENTATION
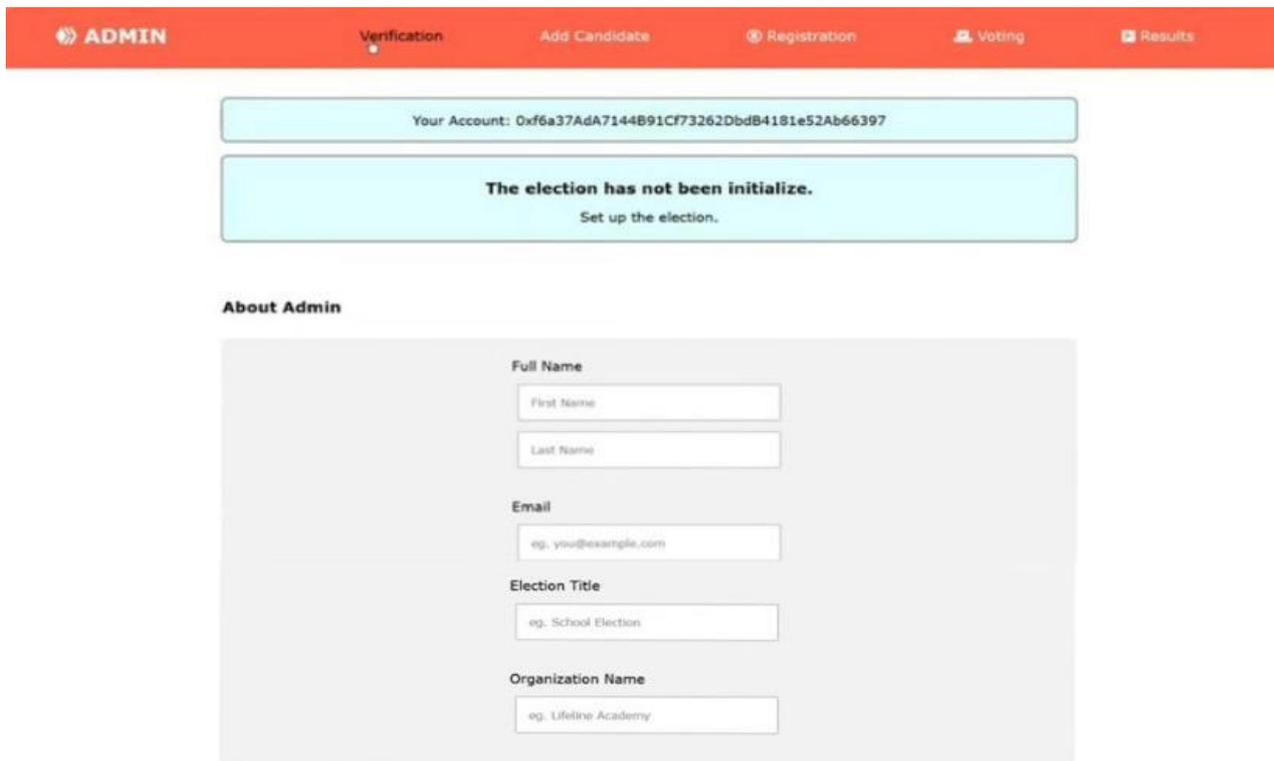
7. RESULTS

The goal of this research is to analyze and evaluate current research on blockchain-based electronic voting systems. The article discusses recent electronic voting research using blockchain technology. The blockchain concept and its uses are presented first, followed by existing electronic voting systems. Then, a set of deficiencies in existing electronic voting systems are identified and addressed.

The blockchain's potential is fundamental to enhance electronic voting, current solutions for blockchain-based electronic voting, and possible research paths on blockchain-based electronic voting systems.

Numerous experts believe that blockchain may be a good fit for a decentralized electronic voting system.

Furthermore, all voters and impartial observers may see the voting records kept in these suggested systems. On the other hand, researchers discovered that most publications on blockchain-based electronic voting identified and addressed similar issues. There have been many study gaps in electronic voting that need to be addressed in future studies.

Scalability attacks, lack of transparency, reliance on untrustworthy systems, and resistance to compulsion are all potential drawbacks that must be addressed. As further research is required, we are not entirely aware of all the risks connected with the security and scalability of blockchain-based electronic voting systems.