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Blockchain Based Voting System

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ABSTRACT: In the digital era where hacking and bypassing a system is easy, tampering of data is always possible leading to bad situations. Blockchain is used to store data which is near impossible to change or tamper with as it is very secure in nature. Voting as a process in any nation is an essential event and if votes get miscalculated by any external source it will be harmful. To avoid such kinds of situations and make it more comfortable blockchain technology comes in acknowledgment. We propose an e-voting system based on blockchain technology. Blockchain technologies deliver an endless variety of applications that benefit from distributed economies. The proposed model is an web application that has enhanced security features which includes both authentication and authorization. Authentication is incorporated by using a unique identification key and authorization is done by login ID and password. Voters are also being verified by One-time password. The security in this project is implemented by SHA-1 along with blockchain. The vote is casted in the form of transaction, where a blockchain is created, which keeps track of tallies of votes.

KEYWORDS: Blockchain, Voting, Proof of Work, SHA-1

I. INTRODUCTION

The voting systems currently in use in the country are Electronic Voting Machines (EVM) and Secret Ballot Voting, both of which require a large amount of manpower and are extremely time-consuming processes. The election officers must then check their Voter's Id in the voters' list of booths, and if the information is present, the voter can vote in that booth. The EVMs must be checked and transported to various parts of the country where the election is being held. It also necessitates manual labour and security. The counting of votes cast in EVMs requires manpower as well and takes an entire day, while ballot voting is entirely manual. Because all of this work is done by hand, there is a high risk of malpractice, making the conduct of a free and fair election extremely difficult

OBJECTIVES:-

The primary aim of our project is to develop an Online Voting System that seeks to use various stages of security authentication to enhance the electioneering process and enables all eligible voters to vote from any location.

The scope and objectives of the proposed system would be as follows –

1. To create a secured online voting platform where authenticity of votes and voters are ensured using face recognition
2. To ease the problem of queuing and crowding during voting period on elections

II. LITERATURE REVIEW

To make the voting process very easy and efficient wireless and web technologies are used. The online- voting system has the possibility of secure, easy and safe way to capture and count the votes in the election. An election is a formal decision-making process by which a population or society chooses an individual to hold a political office. Elections have long been the standard process for modern representative democracy, dating back to the 17th century. Elections are held by both public and private bodies, such as the government, as well as private and business groups, for example, to select members for a company's Board of Directors, professional club leadership, and even voluntary associations.

III. METHODOLOGY

This section discusses the development process involved in developing the blockchain based voting system, include problem identification, proposed solution and development technologies

Problem Identification

The paper voting system is the most common system for voting. Before the electronic voting system is implemented, it will be used. This systems disadvantages are 1) The time it takes 2) The speed is low.

A voting machine that uses an electronic voting machine to allow voters to pass on their secret ballots The inconvenience is 1) Poor computer science individuals cannot vote correctly, 2) Safety threats sensitive, 3) electricity consumption at polling stations; and 4) Costs.

In general applications, password protection is high and phishing attacks are not the focus of the application. Website users are not protected efficiently from phishing.

Proposed Solution

Use of electronic voting can reduce or eliminate undesirable human errors, in addition to its reliability, the online voting system does not need geographical proximity of voters which increase the number of participating voters, e- voting saves a lot of time for voters and reduce a cost when counting the voted ballots.

IV. SYSTEM ARCHITECTURE

Phase 1:

In this phase we will cover the front-end module in which we will build the interactive user-interface for the admin as well as the user. In parallel the research work related to the implementation of Blockchain in decentralized application will be done.

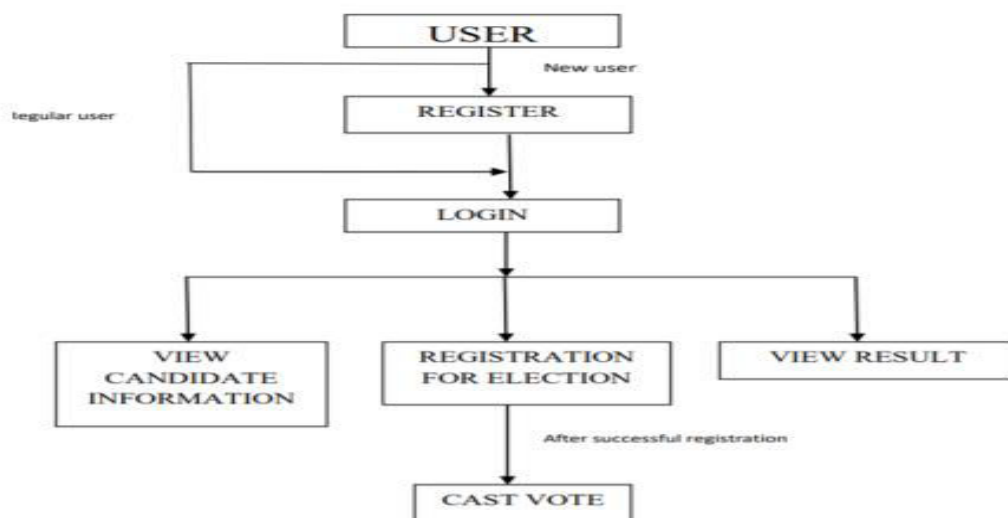


Fig.3.1 User flow diagram

Fig.1. Working of User

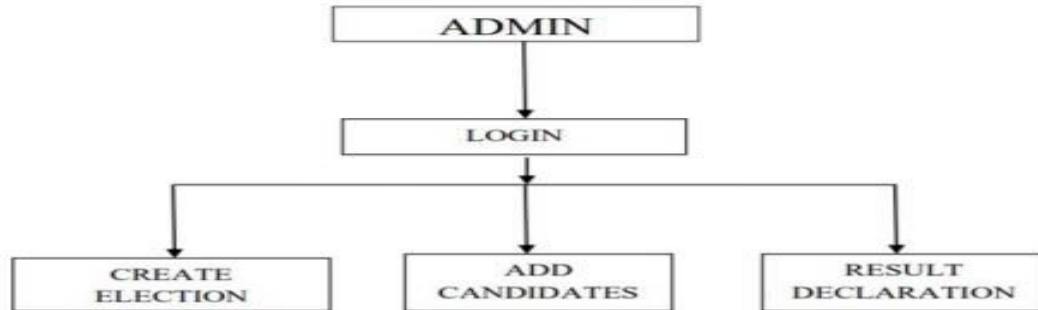


Fig.2. Working of Admin

Phase 2:

In this phase we will cover the back-end module we will implement the blockchain using Ethereum framework and convert the system into a decentralized application.

Research Methodology of Phase Two

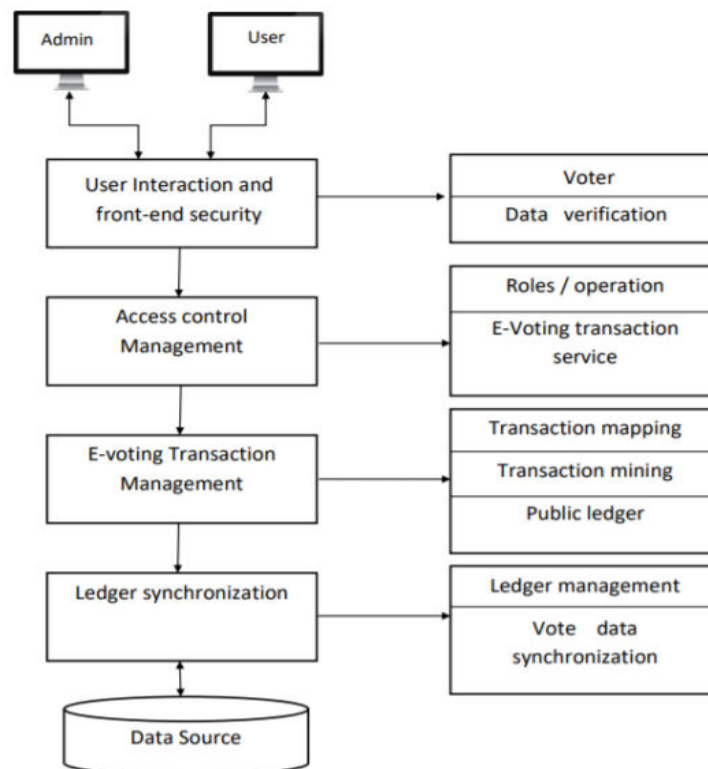


Fig.3. Research Methodology

Phase 3:

The connection of two different module along with the testing of the platform will be completed in this phase.

Software Used

1. Visual Studio Software
2. Xampp Server
3. MySQL Database
4. HTML
5. Boot Strap
6. JavaScript
7. PHP

Results

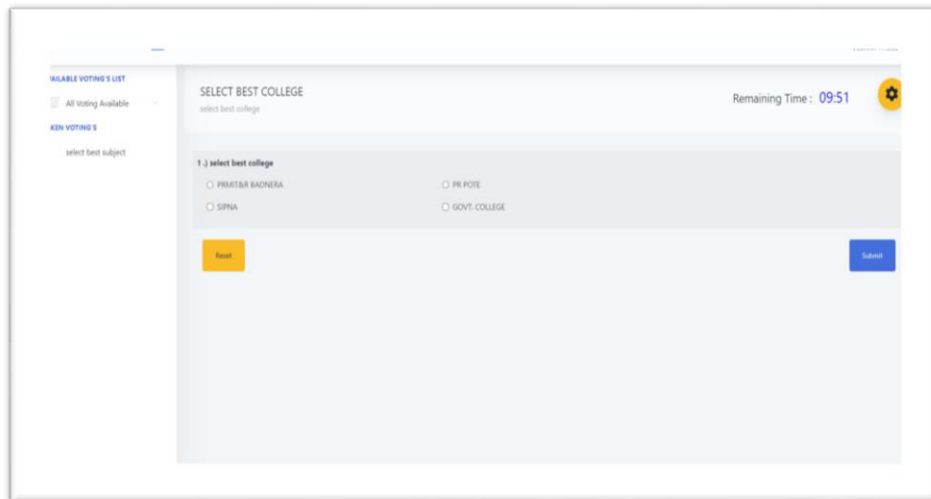


Fig.4. Dashboard seen when User is Voting

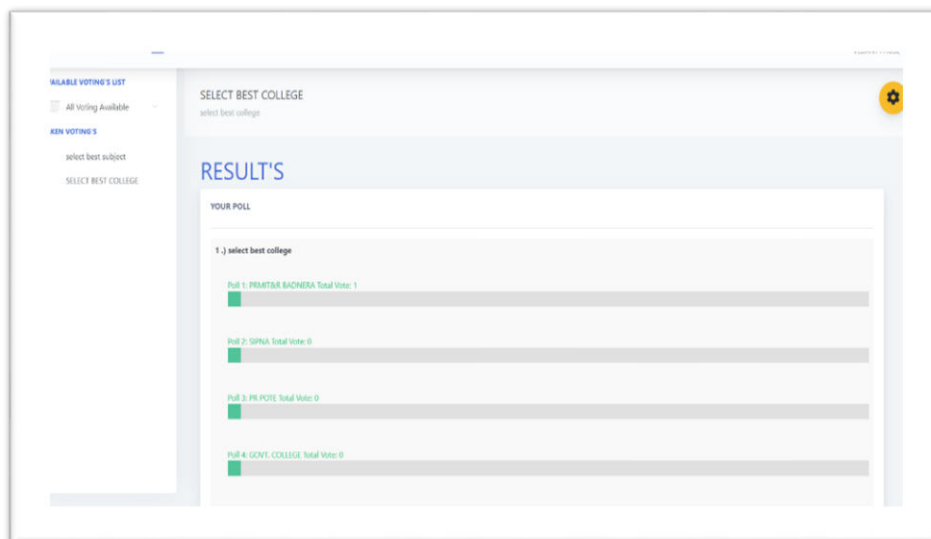
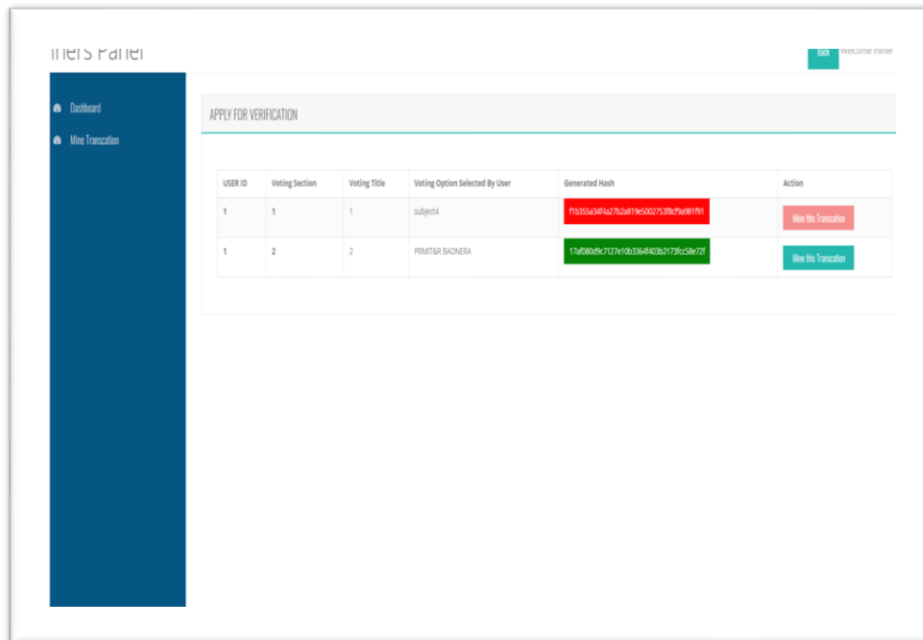


Fig.5. Immediate Declaration of Results



USER ID	Voting Section	Voting Title	Voting Option Selected By User	Generated Hash	Action
1	1	1	subject4	7f305a4f6a752af7e6027938f5e619f1	View No Transaction
1	2	2	PRINTER SHONERA	17f980d9c7127e10633644020173e56470	View No Transaction

Fig.6. Hash Generated for the Transactions

Acknowledgement

We would like to thank our mentor Prof. N. M .Yawale Mam for her crucial guidance throughout the project. We would also like to thank her for giving us an opportunity to publish paper on “Blockchain based Voting System”. The references we used are given below.

V. CONCLUSION

A more safe way of conducting voting has been published in this paper. As mentioned, the “Blockchain based Voting System” provides us an platform to conduct the voting with more security and reliability as well as provides all the voters transparent results.

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