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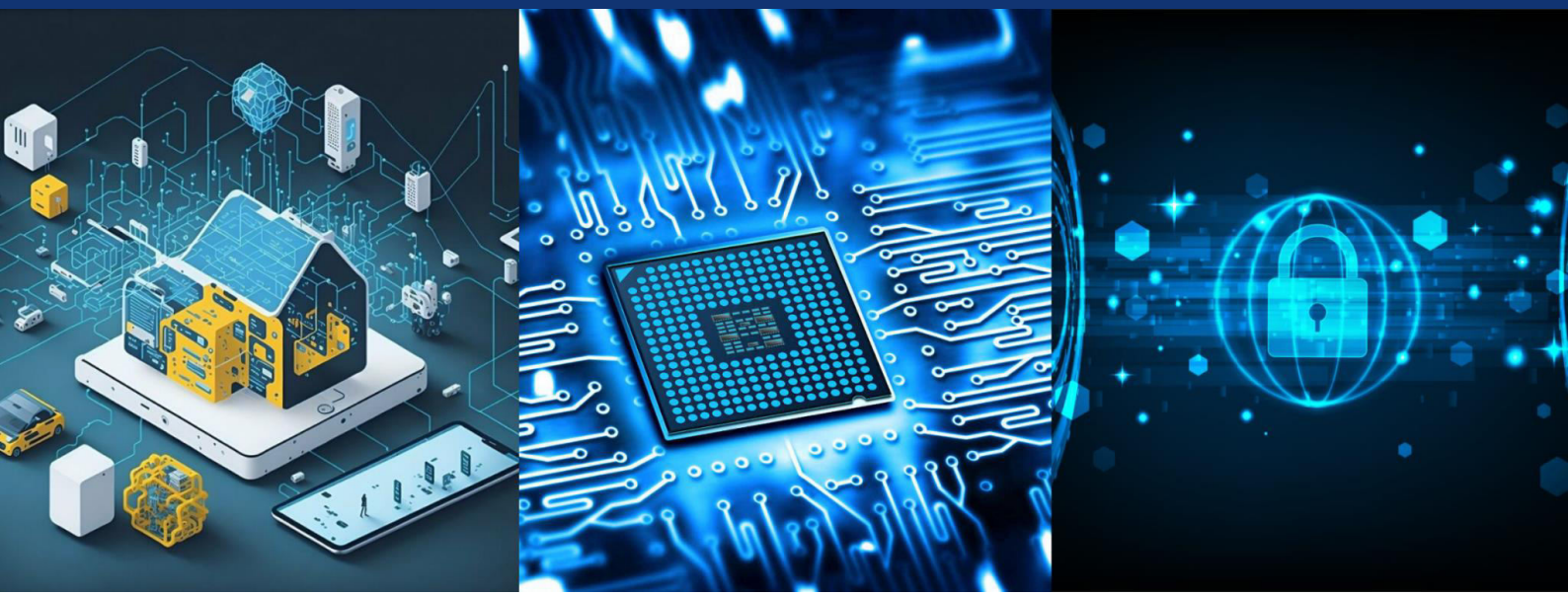

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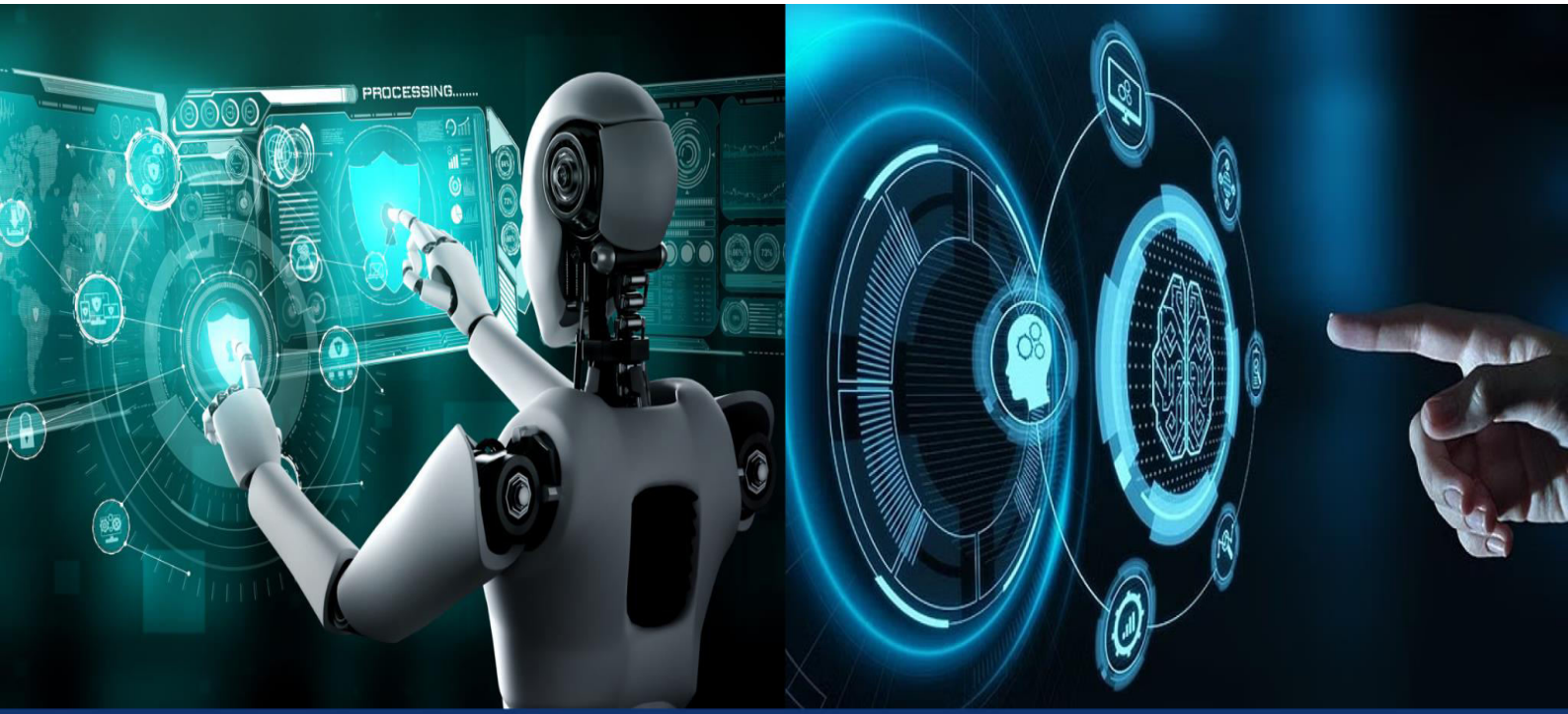

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Blockchain based Voting System

Mrs. Bhavana S Patil, Abhishek R Halluru, Chandrappa MK, Praveen S Pujar, Sudeepagouda S Patil

Assistant Professor, Department of CSE, Sri Taralabalu Jagadguru Institute of Technology, Ranebennur, Karnataka, India

UG Student, Department of CSE, Sri Taralabalu Jagadguru Institute of Technology, Ranebennur, Karnataka, India

UG Student, Department of CSE, Sri Taralabalu Jagadguru Institute of Technology, Ranebennur, Karnataka, India

UG Student, Department of CSE, Sri Taralabalu Jagadguru Institute of Technology, Ranebennur, Karnataka, India

UG Student, Department of CSE, Sri Taralabalu Jagadguru Institute of Technology, Ranebennur, Karnataka, India

ABSTRACT: Democratic voting is a crucial and serious event in any place, the current election scheme in any place, be it a school college, or even a country is done through ballot papers or using EVM. This process has many disadvantages such as transparency, low voter turnout, vote tampering, lack of trust in electoral authorities, delay in results, and above all security issues. So, the growing digital technology has helped many people's lives nowadays. The concept of electronic voting is introduced to combat the disadvantages of the traditional voting system. Electronic voting is essentially an electronic means of casting and counting votes.

A blockchain-based voting system provides a secure and transparent way to conduct elections using blockchain technology. It records votes on a distributed and tamper-proof ledger, ensuring that each vote is counted accurately and cannot be altered. Voters can cast their ballots digitally, and their identities are protected using encryption, maintaining privacy and anonymity. The system allows real-time tracking and verification of votes, making the process transparent and trustworthy. Smart contracts are used to automate tasks like verifying voters and counting results, reducing errors and speeding up the process. This approach also makes voting more accessible, especially for remote and disabled voters. While challenges like scalability, cost, and ease of use need to be addressed, blockchain-based voting has the potential to improve the security, efficiency, and fairness of elections, creating a more reliable and trusted democratic system.

KEYWORDS: Enhance Accessibility, Increase Voter Turnout, Ensure Security, Reduce Costs, Improve Accuracy, Facilitate Quick Results, Promote Transparency, Environmental Sustainability, Support Scalability

I.INTRODUCTION

In any democratic country, voting is a fundamental right of any citizen that enables them to choose the leaders of tomorrow. It gives individuals in a community the facility to voice their opinion. It helps them to realize the importance of citizenship. Blockchain based voting system is software platforms used to securely conduct votes and elections. As a digital platform, they eliminate the need to cast your votes using paper or having to gather in person. They also protect the integrity of your vote by preventing voters from being able to vote multiple times.

Electronic voting or e-voting has fundamental benefits over paper based systems such as increased efficiency and reduced errors. The electronic voting system tends to maximize user participation, by allowing them to vote from anywhere and from any device that has an internet connection. The block chain is an emerging, decentralized, and distributed technology with strong cryptographic foundations that promises to improve different aspects of many industries. Expanding e-voting into block chain technology could be the solution to alleviate the present concerns in e-voting. Here we propose a block chain-based voting system that will limit the voting fraud and make the voting process simple, secure and efficient.

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II.RELATED WORK

EXISTING SYSTEM

The Existing System of Election is running manually. The voter has to visit to Booths to vote a Candidate so there is wastage of Time. Due to this many people don't go out to cast their vote which is one of the most important and Worrying factor. In democracy Each and every vote is important. This Traditional system can be replaced by a new online system which will limit the voting frauds and make the voting as well as counting more efficient and transparent.

PROPOSED SYSTEM

We are designing and developing a software platform for voter registration, election voting, real-time election results collation and monitoring and mostly for remote voter's access to election. This intends to speed up the counting of ballots, reduce the cost of paying staff to count votes manually and can provide improved accessibility for disabled voters. To implement a security method, we are using blockchain technology to ensure that votes being casted will not be compromised and no outside attack would be faced.

III.METHODOLOGY

A **software methodology** is a structured approach used to plan, develop, and manage software projects. It provides a set of practices, processes, and guidelines to ensure that software is developed efficiently, meets requirements, and is delivered on time. Examples include Agile, Waterfall, and Scrum methodologies.

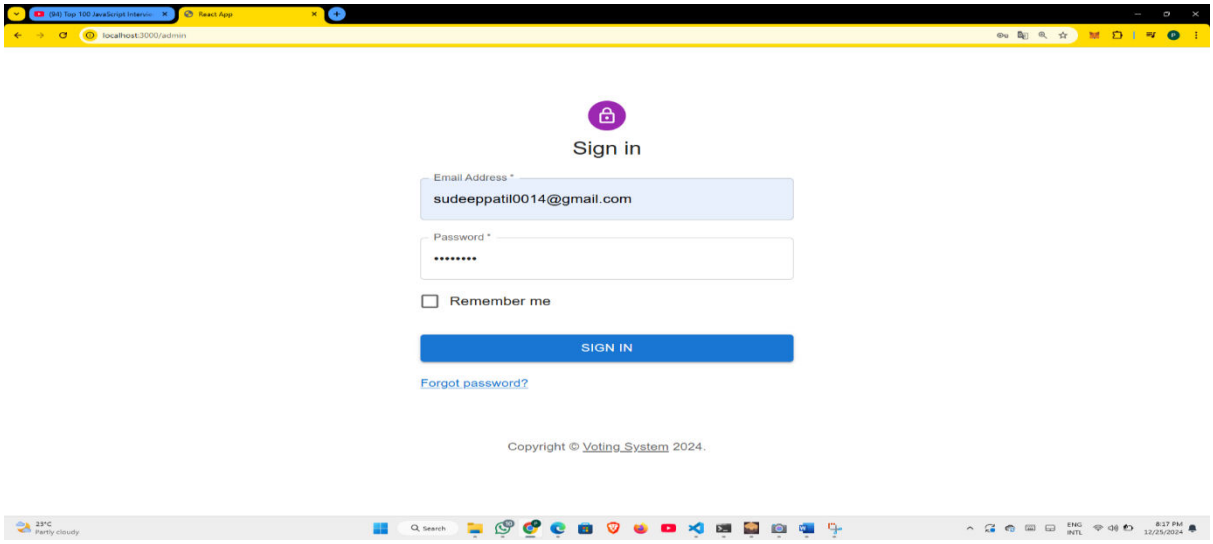
This diagram explains the **Agile Methodology**, a process for software development. It starts with gathering **requirements (user stories)**, followed by **designing** the solution. The team then **develops**, **tests**, and **deploys** the software in small, repeated cycles. Each cycle ends with a **review**, and the process continues for improvements. Agile focuses on flexibility, collaboration, and delivering working software quickly.

In this section, we will show the design and functional phase of our application. The user accesses the web application where the platform is hosted and registers as well as votes securely and transparently.

IV. RESULT AND DISCUSSION

4.1 Admin Login

Admin Login is used for admin to Login in the System. Without email address and password admin or any other person cannot login using this module as shown in Figure 1



4.1.1 Admin Login

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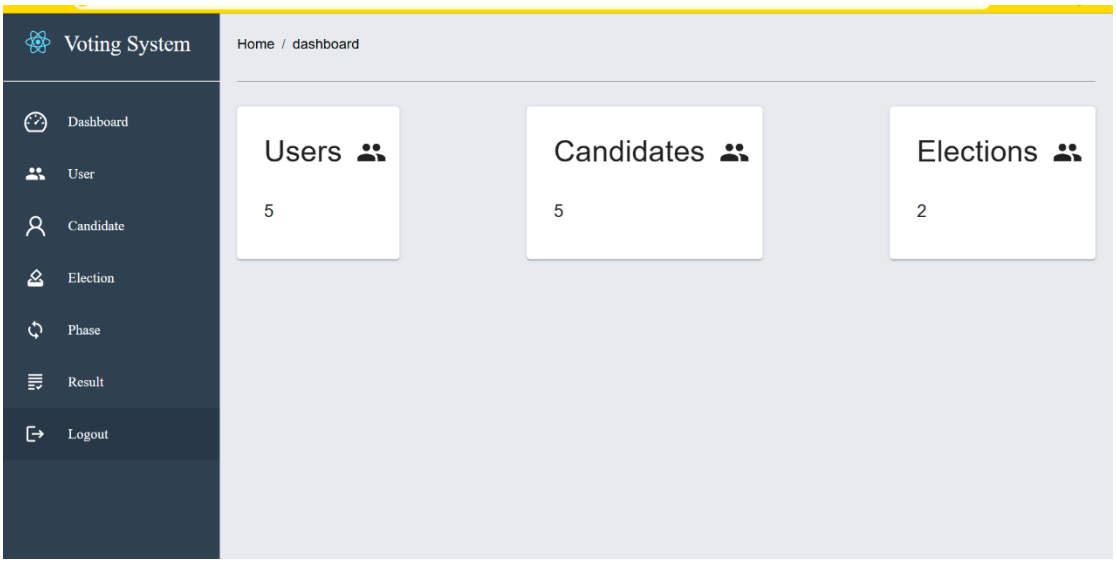
4.2 Admin Dashboard

Here Figure 2 shows Admin Dashboard where admin get all the information like total number of users, candidates and elections available in the system and also navigate to other modules like user candidate, election changing phase or showing result.



4.2.2 Admin Dashboard

4.3 View Users

Admin can view details of the users as shown in Figure 3. he can perform operations like edit users or delete user and add the user in the voting system.

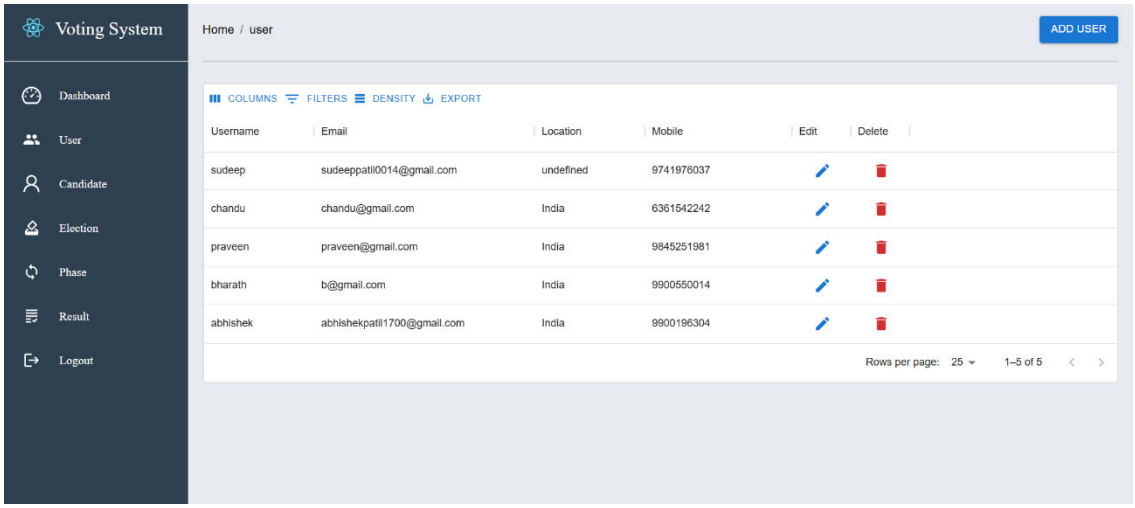


Fig 4.3.1 View Users

4.4 Add User

Admin can add user in the system using this gui where admin have to fill details like username, first name and other details after click on add user guy will get username and password in the e-mail which is entered in the given form.

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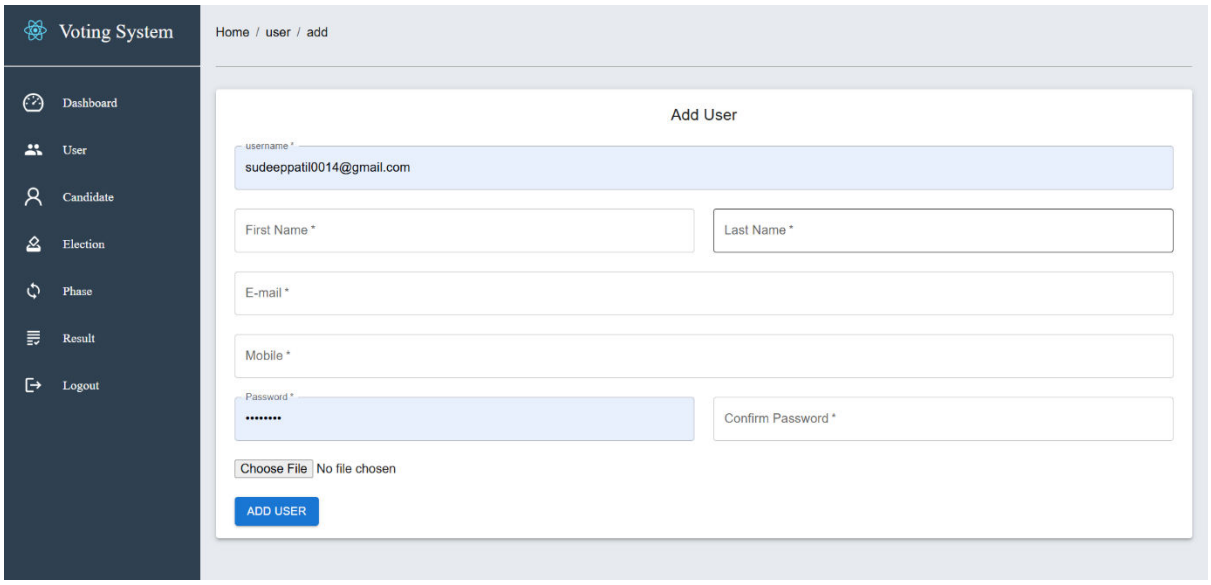

Fig 4.4.1 Add User

4.5 Add Candidate

Admin can add candidate and in the voting phase user will vote for this candidate.

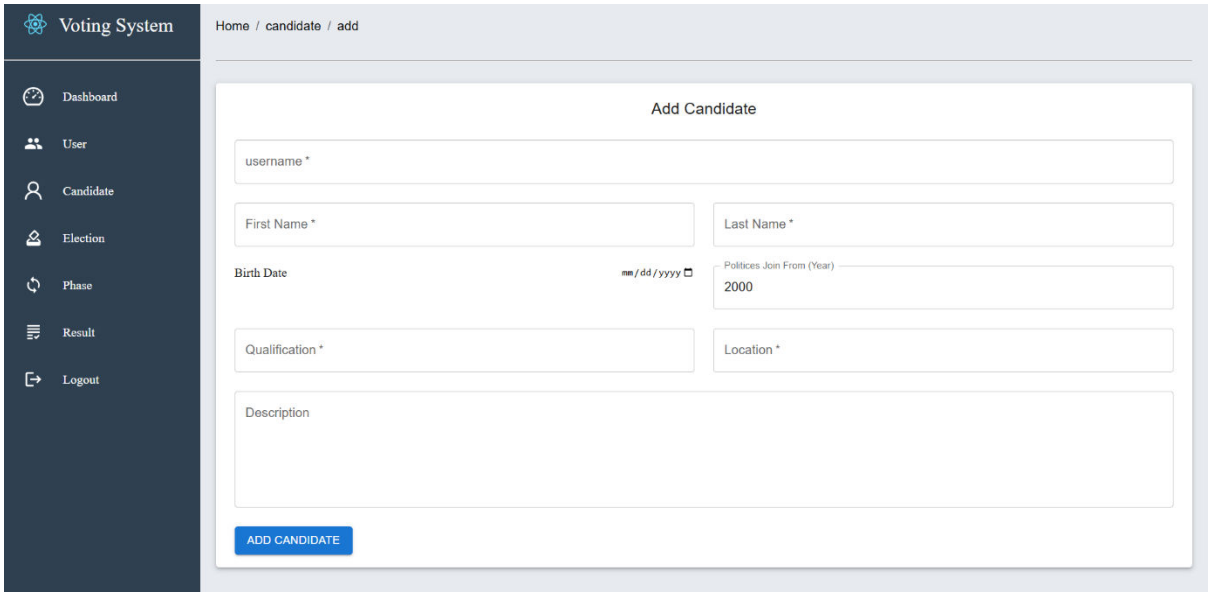

Fig 4.5.1 Add Candidate

4.6 Add Election

Admin can add new election in the system with the unique election name and also add candidate from the available candidate with the dropdown menu of candidates.

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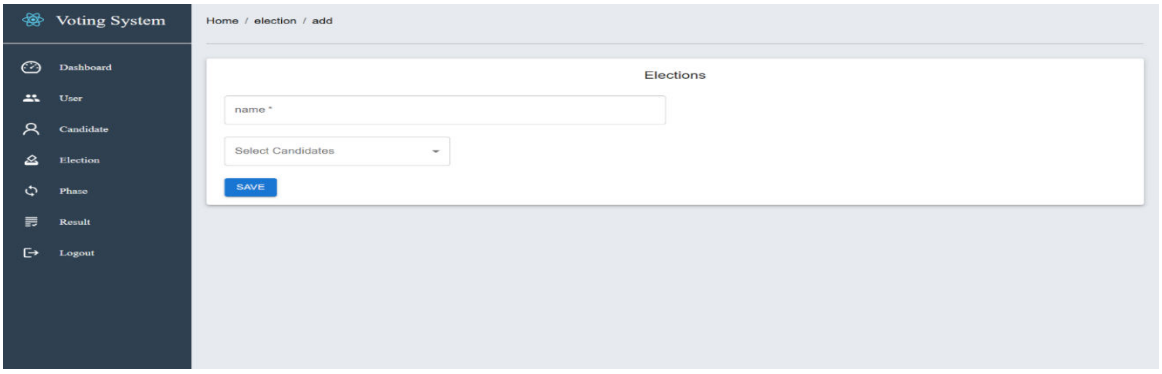

Fig 4.6.1 Add Election

4.7 Edit Phase

From this Page Admin can change the phase of election.

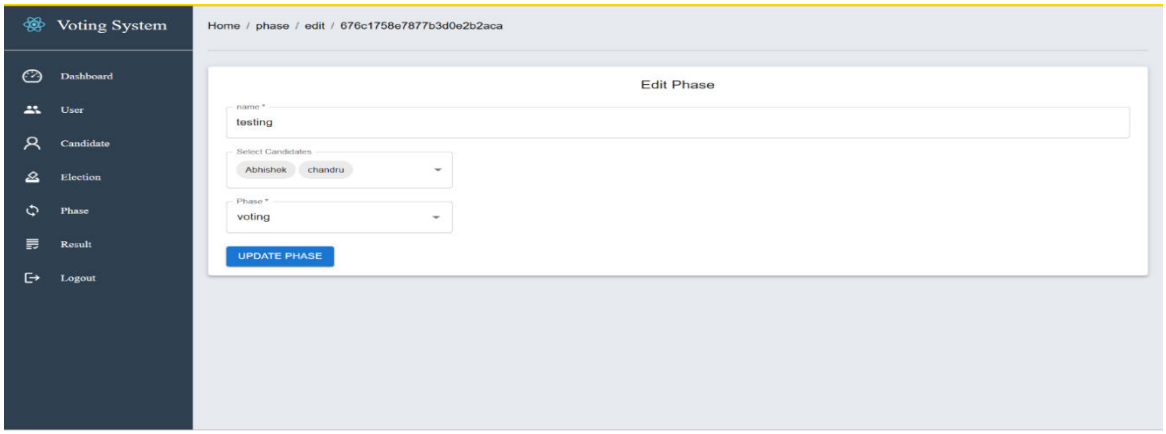

Fig 4.7.1 Edit Phase

4.8 View Elections

Here User can select election in which election user want to vote.

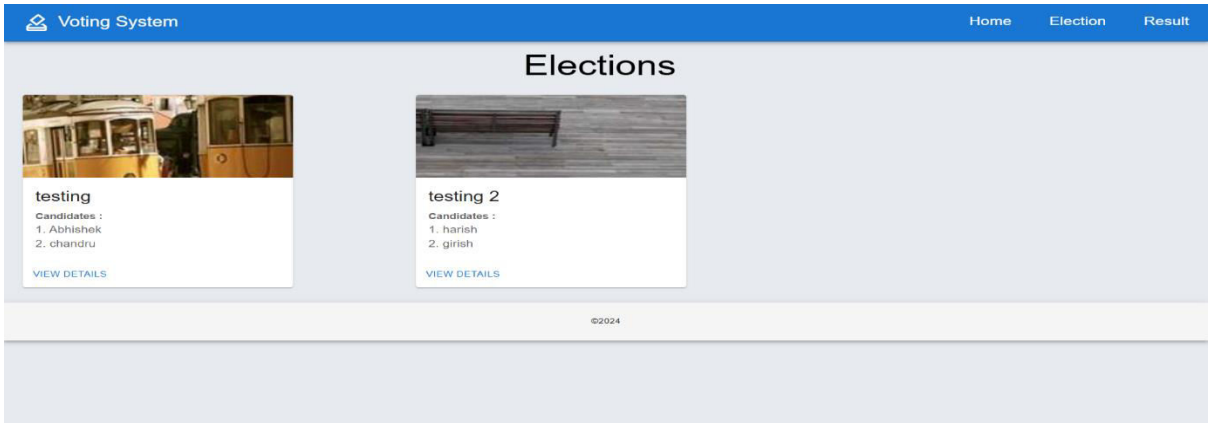

Fig 4.8.1 View Elections

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4.9 Candidate of Election

Here user can select candidate for voting and click on vote the python script will be execute and camera will be open in 30 seconds.

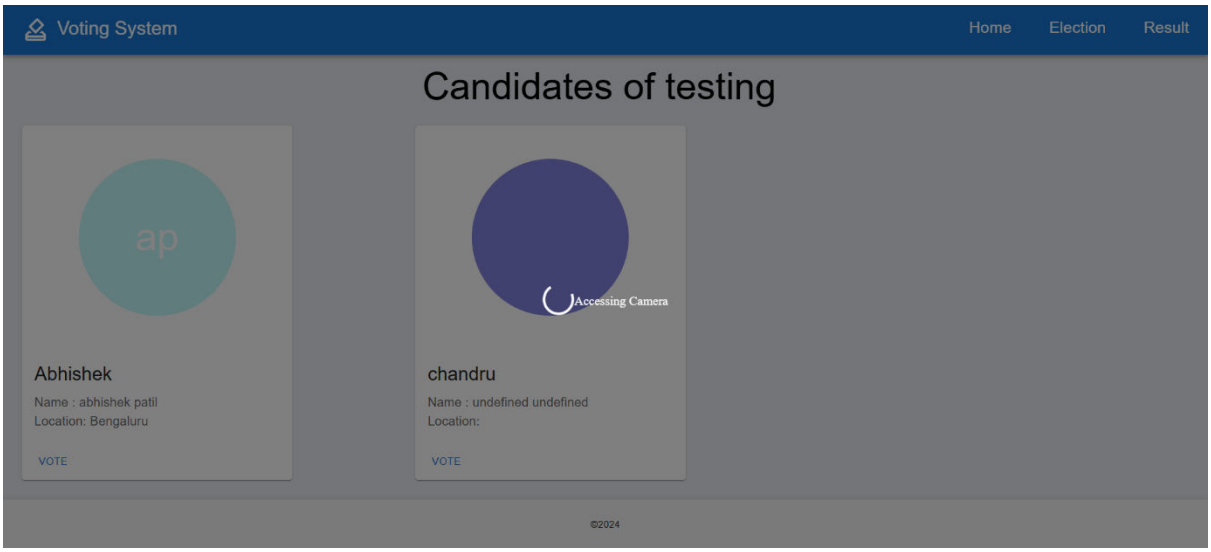

Fig 4.9.1 Candidate of Election

4.10 Login User

User will be recognize using python script and the username will be shown in the username box automatically After entering right password metamask will be open for transaction

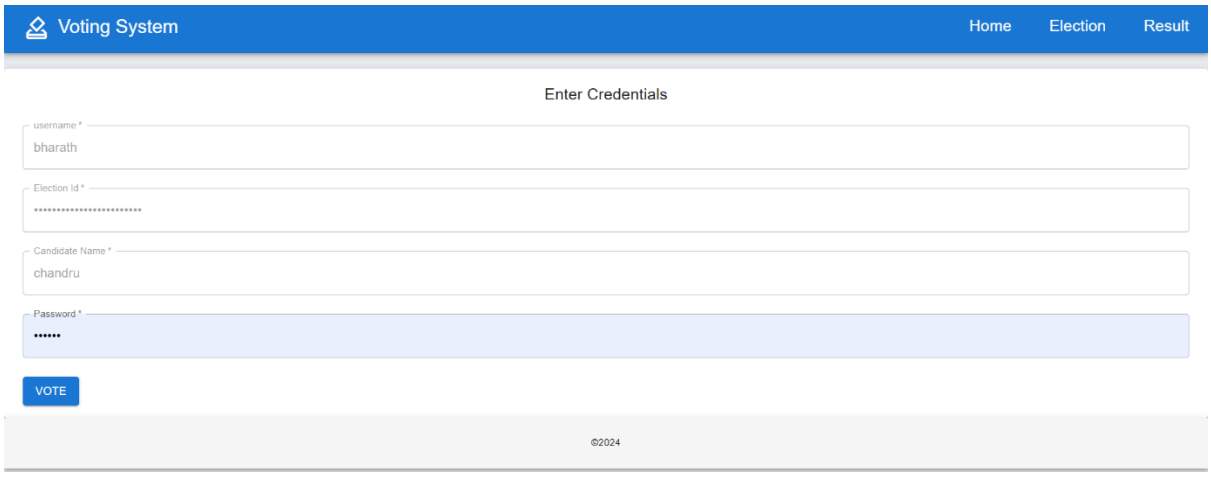

Fig 4.10.1 User Login

4.11 Metamask Transaction Details

Here Ethereum will be transfer from user account to candidate account using metamask After confirming transaction user will get alert for successful transaction and also get email.

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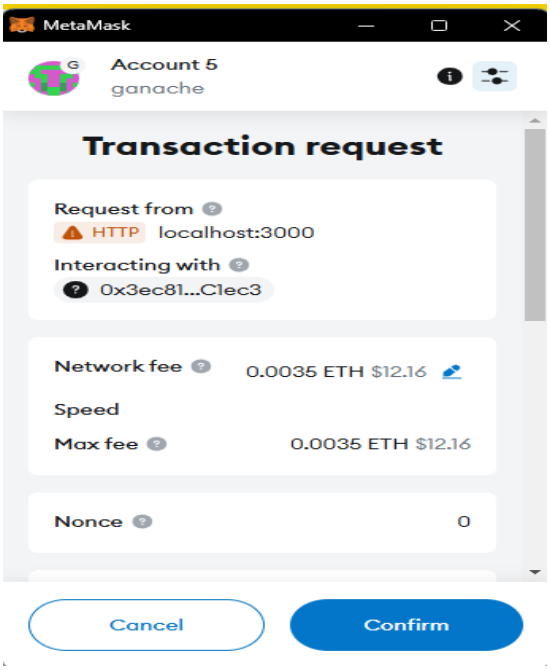

Fig 4.11.1 Transaction Details

4.12 Result of Election

Here user can view all the election which phase is result and view details of the elections.

Fig 4.12.1 Result of Election

4.13 Result of candidate

Here user can view total vote of the particular candidate which election is chosen.

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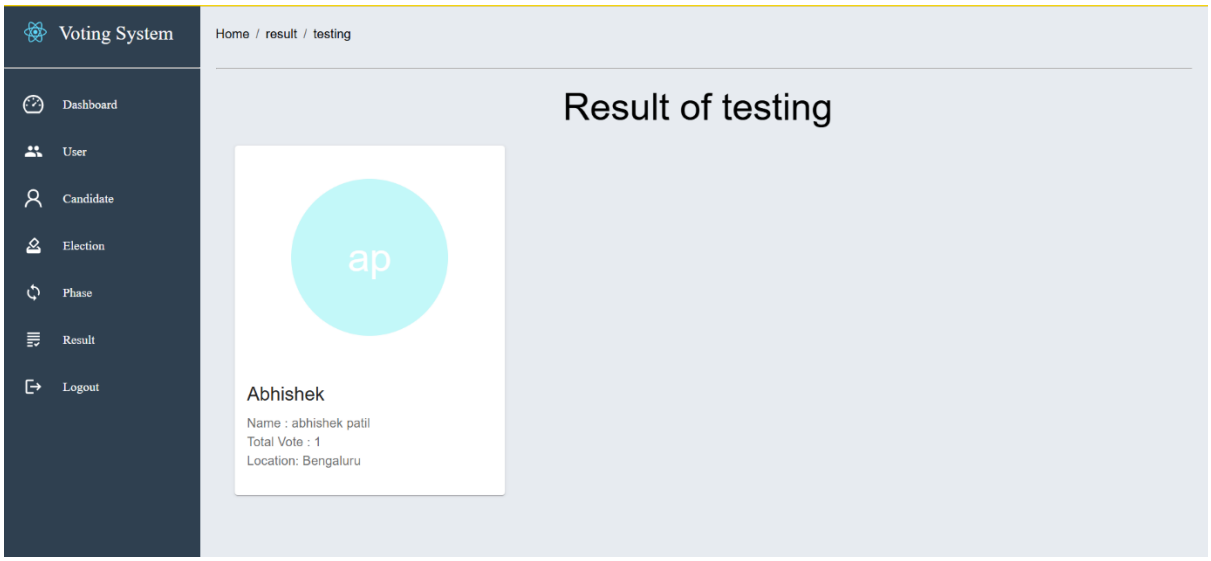

Fig 4.13.1 Candidate Result

V. CONCLUSION

In conclusion, a blockchain-based voting system can make elections safer, more transparent, and efficient. It securely records votes in a way that cannot be changed, reducing fraud and improving trust in the results. This system also allows for remote voting, making it more convenient and accessible. However, challenges like scaling for large elections, ensuring voter identity, and educating people about the system need to be addressed. With proper planning, blockchain voting could improve elections and strengthen democracy globally.

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