Journal Publication of International Research for Engineering and Management (JOIREM)
Volume: 03 Issue: 12 | Dec-2025
ISSN (O) 3107-6696

Digital Vote System With Real Time Result Tracking

Pradeep S[1], Ms Kavya H V[2]

[1] P.G. Student, Department of Master of Computer Applications, PESITM College, Shivamogga, India
[2] Assistant Professor, Department of Master of Computer Applications, PESITM College, Shivamogga, India

---

Abstract - By offering a safe online platform where qualified voters can cast their ballots electronically the Digital Voting System aims to revolutionize traditional elections. By providing a rapid reliable and user-friendly way to cast a ballot the system does away with the need for traditional polling places and avoids lengthy lines. Before accessing the portal voters must authenticate themselves. Strict validation procedures prevent duplicate voting and each user is only permitted to cast one ballot. Encryption protects the data from unwanted access and all votes are kept in a secure database for confidentiality. This strategy reduces the manual counting errors that are frequently observed in conventional techniques. The real-time counting module offers continuously updated election results encouraging transparency and cutting down on delays and administrators can effectively manage voter lists and candidate information. The systems scalability makes it suitable for adoption by communities organizations and educational institutions. It provides a straightforward interface for simple navigation and facilitates seamless operation during periods of high user activity. To safeguard the voting process the project places a strong emphasis on operational accuracy system integrity and multiple security layers. Reducing human intervention lowers the possibility of tampering which eventually boosts confidence in digital election platforms.

KEYWORDS: Secure Voter Authentication, Vote Verification, Election Data Classification, Machine Learning, Encrypted Ballot Processing, Real-Time Result Visualization.

I. INTRODUCTION

The Long lines manual verification paper ballots and laborious result computation are common features of traditional voting procedures which can result in mistakes delays and security issues. In order to solve these problem the Digital Voting System offers an online platform for managing elections that is safe effective and easy to use. It reduces the need for physical voting locations by allowing verified voters to log in examine candidate information and cast their ballot from any location. To guarantee that each voter is only permitted to cast one vote and that all votes are kept completely private the system employs secure login procedures encrypted voting data storage and stringent verification checks. The system also makes it simple for administrators to handle voter records candidate information and real-time vote counting which improves the processs dependability and transparency. The Digital Voting System shows how digital transformation can improve election processes across institutions and organizations in terms of speed accuracy and trust by utilizing contemporary web technologies and secure database practices. Systems that can handle sensitive tasks with extreme precision and robust security are more important than ever as digital platforms continue to grow. This change is reflected in the Digital Voting System which offers an organized and reliable framework for holding elections without the constraints of conventional techniques. By relying on automated verification organized workflows and efficient data processing the system enhances the overall interaction between voters and administrators. Its primary goal is to minimize needless human intervention and steer clear of typical problems with traditional elections like misplaced ballots mistakes made during manual counting and other logistical challenges. The platform makes sure that vote data is safe at all times by incorporating security features. Because of its scalable design it can be used in institutions organizations and other settings that need impartial and transparent election management.

II. LITERATURE SURVEY

The Research on digital voting systems has expanded significantly as institutions seek more secure, transparent, and efficient alternatives to paper-based elections. Existing studies explore authentication mechanisms, data encryption techniques, distributed systems, and user-friendly voting interfaces to increase accuracy and trust in electronic voting.

[1] R. Gupta, M. Sharma, and A. Singh – 'Secure E-Voting Using Cryptography'
This study presents an e-voting model that focuses on securing votes during transmission through advanced cryptographic algorithms.

[2] S. Fernandes, K. Thomas, and R. George – 'A Web-Based Voting System with Multi-Factor Authentication' This research introduces a digital voting platform that incorporates multi-factor authentication to enhance voter identity verification.

[3] L. Patel, S. Mehra, and N. Rao – 'Real-Time Vote Counting Using Online VotingPlatforms'
This paper examines how real-time counting modules can streamline the election process.

[4] H. Joshi andP.Verma–'Blockchain-BasedE-VotingforSecureElections'

Journal Publication of International Research for Engineering and Management (JOIREM)
Volume: 03 Issue: 12 | Dec-2025
ISSN (O) 3107-6696

The authors explore how blockchain can be utilized to develop digital voting systems that are resistant to tampering and unauthorized alterations.

III. METHODLOGY

The digital voting system follows a step-by-step operational flow designed to conduct elections in a secure and controlled manner Voter data preparation is the first step in the process where registered voter data is gathered from the approved database. To guarantee accuracy and validity each voters identity details—such as voter ID and constituency—are verified. To stop unauthorized participation duplicate records and ineligible entries are eliminated at this point.

The voter can access the voting interface via a secure login process once the verification process has been completed successfully. Each voter can only access the system once thanks to authentication checks. The list of candidates pertinent to their constituency is shown to the voter after they have been authenticated. To minimize the possibility of an unintentional submission the vote selection is only recorded following the voters explicit confirmation. As soon as a vote is cast it is encrypted and kept in the database without being connected to the voters identity.

This division permits system-level validation while preserving vote confidentiality. The system keeps an eye on voting activity in order to identify anomalous behavior and prevent repeated voting attempts. The stored votes are retrieved for counting after the election authority closes the voting phase. To guarantee accuracy the counting procedure is completely automated and adheres to preset validation guidelines. The results are transparent and simple to understand because they are generated instantly and presented via a dashboard with distinct visual indicators. .

IV. EXPERIMENTAL RESULTS

To confirm the accuracy and dependability of the digital voting system several sets of voter and election data were examined. Valid and invalid voter credentials successful and unsuccessful login attempts and accurate and duplicate voting scenarios were all included in the test cases. The system regularly generated accurate voting results after validation and secure processing avoiding multiple submissions and illegal access. Only eligible voters were allowed to cast a single ballot and all votes were accurately counted thanks to the efficient enforcement of election regulations by the authentication and vote management modules.

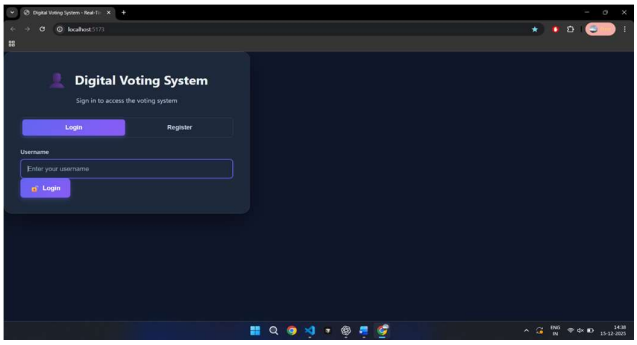

Fig 1 interface for the login page

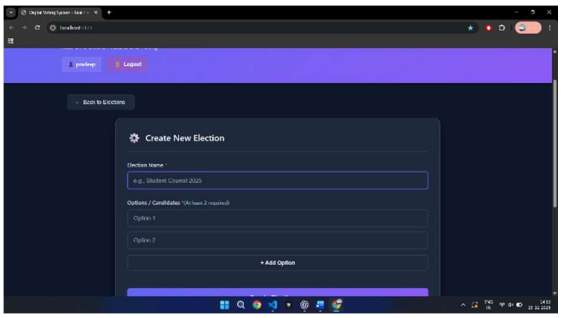

Fig 2 (a) Create New Election

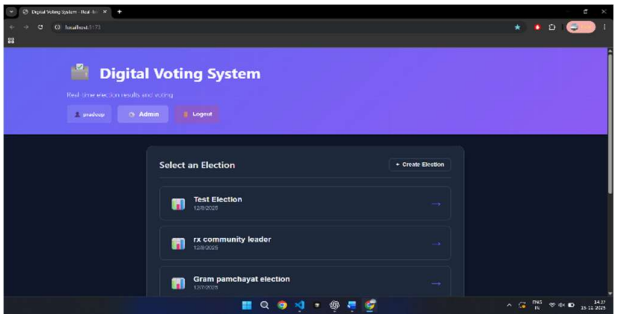

Fig 2 (b) list of elections page

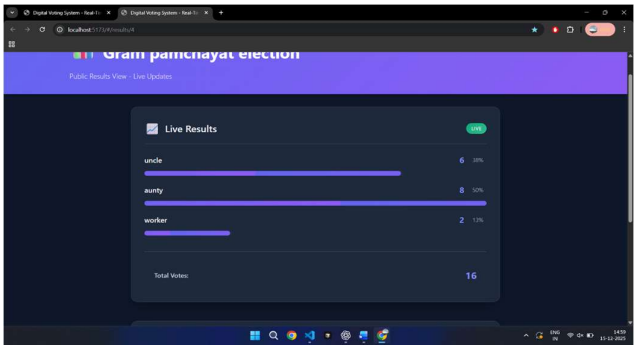

Fig 3(a) live results

The screen displays the live result view of a Gram Panchayat election within the digital voting system. For clarity each candidates vote totals and percentages are displayed using progress bars and are updated in real time. clear summary of the elections results is given at the bottom along with the total number of votes cast.

V. CONCLUSION

It ensures accurate and reliable voting by combining strong authentication encrypted vote processing and a well-organized workflow that maintains transparency throughout the election cycle. By confirming voter identity preventing duplicate voting and securely storing ballots the system upholds the core principles of justice and confidentiality. Its user-friendly interface makes voting simple even for non-technical people. This project demonstrates how modern technology can improve democratic participation by replacing manual procedures with fast secure and verifiable digital operations.

REFERENCES

[1] B. Adida, "Helios: Web-based open-audit voting," in *Proc. 17th USENIX Security Symp.* (SS'08), 2008.
[2] residuosity classes," in *Advances* in Cryptology — EUROCRYPT *'99*, Lecture Notes in Computer Science, vol. 1592, pp. 223–238, 1999. doi:10.1007/3-540-48910-X_16.
[3] U. Jafar, T. Khan and S. Ahmad, "Blockchain for Electronic Voting System—Review and Open Challenges," *Sensors (Basel)*, vol. 21, no. 18, 2021.
[4] K. Yuan, K. Li and X. Zhang, "An electronic voting scheme based on homomorphic encryption and decentralization," *PeerJ Computer Science* (or similar open access journal), 2023.
[5] A. C. Ryan, "Prêt à Voter with Paillier encryption," *Computers & Security*, vol. 27, no. 2-3, pp. 50–61, 2008.
[6] H. Druliac, J. Smith, et al., "On the feasibility of end-to-end verifiable online voting — a case study and trial," *Internet Research / Journal / SciDirect*, 2024.
[7] F. Hao, S. Wang, S. Bag, R. Procter, S. Shahandashti, M. Mehrnezhad, E. Toreini and R. Metere, "End-to-end verifiable e-voting trial for polling station voting," University project/trial report (White Rose Research Online), 2020.
[8] E. Bendiksen and A. M. Juels, "A survey of blockchain-based electronic voting," *ACM Computing Surveys / ACM Digital Library*, 2022. doi:10.1145/3560905.3568181.
[9] M. Alsadi, "Towards end-to-end verifiable online voting," arXiv:1912.00288, Dec. 2019.
[10] R. Suwandi, "Secure e-voting system by utilizing homomorphic properties," *TELKOMNIKA (Telecommunication Computing Electronics and Control)*, vol. 16, no. 6, pp. 2734–2741, 2018.