

REMOTE ELECTION POLLING USING FULL STACK DEVELOPMENT

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Abstract. Considering voters' unwillingness to visit the polling place makes the voting procedure rather uncomfortable when compared to the traditional voting atmosphere. This study analyses an online voting system that allows voters, candidates, and administrators to participate in an Internet Voting System. This research paper presents the design and implementation of an online voting system utilizing HTML, CSS, MySQL, and PHP. The method intends to give voters a safe, practical, and accessible means to vote remotely without having to go to polling places in person.

Keywords—HTML, CSS, MYSQL, PHP, Web services.

INTRODUCTION

The primary democratic right of every person in India is the ability to vote. Voting gives people the chance to exercise their right to elect leaders and voice their thoughts on significant issues. There are many voting methods employed, such as paper ballots and electronic voting machines, however, they all take more time and require more workers. But, under the old system, many urban residents are unable to exercise this right due to their hectic schedules. Every nation in the world wants an alternative to the current voting process. Online voting systems have drawn a lot of attention recently because of their potential to increase the efficiency, accessibility, and openness of the electoral process. Online voting systems have gained popularity as a way to hold safe and reliable elections as a result of technological improvement and the widespread usage of the internet. Using such systems can eliminate the need for physical voting boxes, paper ballots, and manual vote counting, leading to a better and more affordable process. But online voting technology hasn't advanced because people are distrustful of it and afraid of cyber threats. We offer an online voting system that offers features like accuracy, convenience, flexibility, privacy, and credibility to eliminate all these drawbacks and our voting technology allows any voter to execute their right to vote from any location.

The major objective of this strategy is to overcome the shortcomings of the conventional voting procedure. The major goal of implementing an online voting system is to solve some of the drawbacks of the current system, which typically entails complexity and a drawn-out voting procedure. We hope to address these issues and give all qualified voters a more convenient and accessible voting experience by using an online voting system. Enabling remote voting has the potential to boost voter turnout and election participation overall, which is the aim of

encouraging more individuals to participate in the voting process. We want to improve the voting process, remove obstacles to participation, and encourage democratic engagement across various populations through the implementation of an effective and user-friendly online voting system, thus boosting the democratic process.

A. Problem Background: Traditional voting procedures can be time-consuming, complex, and vulnerable to fraud. Voters can participate in the election more effectively and conveniently through online voting technology. However, these systems struggle with issues like accessibility, privacy, and security.

B. Research Objective: The major goal of this study is to further the development of an online voting platform by supplying all necessary security levels. The goal of this project is to simplify, improve, and safeguard the voting process. The possibility of fraudulent voting in traditional voting systems is eliminated by online voting systems.

C. Scope of Study: The Online Voting System provides voters with convenience, simplifies the vote-counting process, permits the rejection of invalid votes, maintains detailed data on all candidates and votes, confirms whether a voter has already cast their ballot, makes it simple to access all relevant and important information online, has the potential to increase overall voting percentage, and reduces security concerns and booth capturing. Using an online voting mechanism will ultimately speed up the organization process.

LITERATURE REVIEW

A. Background: A user may use this system to cast their votes in elections. Each user must sign in and choose the candidates they want to support in order to cast a ballot. Ethernet is used for both testing and development. On the other hand, the usage of insecure Internet and improper implementations have been revealed in recent year's research and reports in order for the general public to vote in a secure and suitable way, these challenges must be resolved. With online voting software, every user may exercise their right to vote from any location. Online Voting System includes:

- i. Voter details
- ii. Voter's Names with ID and password
- iii. Voter's vote in a database
- iv. Total votes cast
- v. Panel for results

B. Product Perspective: The graphical user interface (GUI) for the election management application that has been created with PHP as its main programming language. Election managers and officials may utilize the system easily and effectively because it aims to simplify the election management process. Even though it can be used independently, an XAMPP server must be installed and set up in order for it to function properly.

C. Product Function: Our system's server back end manages user authentication and the preservation of pertinent data. Users must first log in with their ID and password to access the election module, where they can conveniently and comfortably cast their vote. The election module is accessible through the server's user interface. Their response will be noted, and the result will be displayed.

D. Methodology:

- i. Existing System: The current election system is operated manually. It is a waste of time for the voter to have to go to booths to cast their vote. A voter must personally add their name to the voter list. Additionally, manually counting the votes is required. Each voter's or candidate's information must be individually filled up. Voters must be present in their voting district in order to cast their ballot. Electronic voting machines are used, which are more expensive. Previously, the government used a paper-based voting method. Under this system, voters simply pick up ballot papers from election officials, mark the names of the candidates they support, and then pass the paper back to the officials to cast their ballots.

- ii. Proposed System: The organization's planned working style will be well-structured, with data properly stored in the database to make it simple to retrieve and save information. Accuracy will be given top priority in the proposed system, ensuring that all procedures are completed correctly and that data flowing from the center is trustworthy. With the utmost care made to avoid information repetition whether in storage or elsewhere, redundancy will be eliminated, resulting in effective storage space utilization and consistency in stored data. The proposed system will also emphasize instant information retrieval and storage, addressing the difficulties with manual systems. In addition, the users restricted budget and the system's ability to be developed quickly will be important factors in its design.
- a. Register Stage: All users who want to cast their votes in the election must first register beforehand. The user is given a special voter ID and password here that would later on the day of an election be used to log in.
 - b. Authentication: Registered voters must log in using the access credentials they were given when registering. Once the administrator has authenticated them, they will be able to cast their votes.
 - c. Voting Stage: After being validated, the voter casts his vote. The vote is then kept and encrypted.
 - d. Vote Decryption and Results Announcement: All votes cast are decoded at this stage.

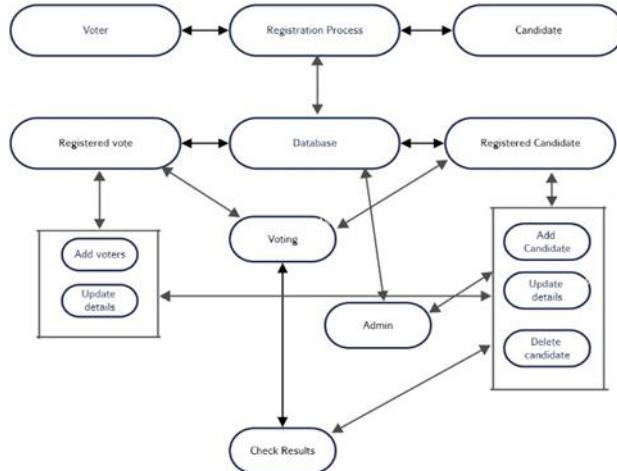


Fig.1 Flow chart

- E. Limitations:
- i. Issues with access and equity: Not all eligible voters may be able to use online voting systems, particularly those without access to the internet, those with inadequate technological literacy, and those with linguistic hurdles. Due to this participation in elections, there may be unequal representation.
 - ii. There may be privacy issues with online voting systems. To preserve voter privacy and prevent unauthorized access, it may be necessary to implement strong data protection procedures in the collecting, storage, and use of personal data for online voting.
 - iii. The online voting process can be delayed, and the validity of the results compromised by technical issues such as hardware malfunctions, software problems, or system faults. To keep technical concerns with online voting systems to a minimum, a strong technological infrastructure, regular maintenance, and backup plans are necessary.
 - iv. It can be difficult to increase voter confidence in online voting systems since certain voters may have doubts about the system's truthfulness, accuracy, and security. It is essential for the successful adoption of online voting systems to ensure transparency, accountability, and public trust.

- vi. Online voting systems could have legal and administrative difficulties, such as adhering to election laws, privacy laws, and cybersecurity standards. Implementing online voting systems may be limited by the complexity of complying with the relevant laws and regulations.
- vii. Online voting systems may be vulnerable to human faults including improper configuration, data entry problems, or insider threats. To reduce human factor vulnerabilities in online voting systems, education, awareness, and strict access constraints is needed.

MODULES OF OUR SYSTEM

- i. Home: It is the home page of our portal and includes all of the feature options. It contains links to further pages, which include voter registration, voter login, candidate registration, admin login, and the about section.
- ii. Voter Registration: This is the website where voters may register themselves to vote. Users must provide the admin with the information requested on the registration page. The relevant database contains all the information that has been entered into the portal. When a user registers, the administrator has the option of accepting them if they are qualified or rejecting them with a justification.
- iii. Voter Login: The user information is stored in the database and provided to the admin when they register on the portal. The user's unique USERNAME and PASSWORD generated after registration are used to log into the portal. There is a New User option where a user may register themselves if the candidate is not already registered on the portal.
- iv. Candidate Registration: Those who want to run as candidates in an election they can fill out the relevant forms on this page and register to run as candidates on the portal by providing their personal information, such as Name, Email, and Contact information.
- v. Admin Login: The administrator can access his account from this page and manage every aspect of the voting process, including adding new elections, generating user IDs, confirming users, producing results, and more. After user authentication, he has the power to generate User ID.
- vi. Election Panel: This panel provides a list of all elections that are currently taking place. Only users who have been validated by the administrator can access this module. By using this module, a user may vote by choosing a candidate in a certain election.
- vii. Voting Result: The user has the right to view the election results, which are provided by this module for all completed elections. Following, when the election will successfully completed, the admin generated all of the results.

TECHNOLOGY USED

- i. Front end: HTML, CSS
- ii. Back end: PHP
- iii. Database: MYSQL
- iv. Server: APACHE(XAMPP)
- v. Technology: WEB-DEVELOPMENT

ADVANTAGES

- i. Voting is the most effective way for members to have an opinion on who leads and where the association is going. Members experience a greater sense of worth, ownership, and duty when given the opportunity to vote in free and transparent elections. Voting is made simple and convenient during online elections, which empowers participants in associations, groups, and other democratic organizations.
- ii. If a member has an Internet connection, they can cast their votes online from any location at any time. Voting is now quick and convenient as a result. Members can use their mobile devices to vote whether "on the go" or at home, at work, or at other locations.
- iii. Election expenses are reduced by using online voting since production expenses are lower. Online elections are substantially more affordable than traditional voting techniques in terms of paper, printing, and mailing. Additionally, because there is no longer a need to hand-construct ballot packets and tabulate votes, employees will benefit from time savings.
- iv. Voter identities and voting information are protected in a properly designed, secure online voting system.

FUTURE SCOPE

This project's future possible scope involves raising increased accessibility, improved security measures, greater voter involvement, and integration with emerging technologies, seamless integration with current systems, trust and transparency, and extensive regulatory frameworks are all part of the future potential for online voting systems. Future improvements might potentially address power failures and system crashes to provide voters greater confidence while casting their votes and also, we can create a democratic process that is more effective, safe, and inclusive.

CONCLUSION

This online voting system, which the voter can use to log in and execute his voting rights, will be used to handle the voter's information. Voters can vote online using the online portal instead of visiting a voting center. All voter names and full information are kept in a database that is maintained by the Election Commission of India. Also, it removes the possibility of fake votes. Also, it reduces manpower and unintended human mistakes. Election results are quickly available and are 100% accurate. Our approach focuses on minimizing paperwork and processing time. Thus, online voting technology makes the entire voting procedure quick and secure.

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