# SECURE AND EFFICIENT ONLINE VOTING SYSTEM

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*Abstract :* Elections are a crucial part of any organization, state or country. The fundamental benefit will be when elections are best conducted without any unfair means. The purpose of this paper is to provide an efficient and secure method for elections. The system has an admin and a voter side. The admin has the responsibility to manage the registrations, candidates and voter's data. On the voter side, the voters will login and vote for the candidate. This is a system which provides convenience to all citizens to cast their vote online. Increasing the voting percentage across any platform is the major goal of this project. The user needs to login with the id and password that is generated by the admin. No unauthorized user can cast the vote. The online system is secure and reliable and therefore cannot be manipulated.

*IndexTerms* - **PHP, MYSQL, phpMyAdmin, XAMPP.**

## INTRODUCTION

In online voting system, people can cast their vote online through the internet. We have developed the system using php. In the proposed system, the user needs to first register and then login. In this system, admin confirms all the data of the candidate and the voter and only those voters can vote. The data of the user will be saved in the database and the admin will verify all the details of the user. All the information of the voters is stored in the database and is maintained by the admin.

There are many methods which are being used for voting purpose, such as ballot paper, EVM machine but all these methods require more time and more man power so to eliminate all these issues we provide an online voting system which gives features such as accuracy, convenience, flexibility, privacy and verifiability. The voter need not to be present at a specific place for voting as the voting procedure is online.

People can cast their vote from anywhere. As universities conduct elections for positions like president, vice president etc. for many college societies like DU, BHU, etc. and other posts for students and online voting system can be used on any cases like these efficiently it can be customized according to client need on any type of elections.

## LITERATURE SURVEY

L.B. Ajayi [1] proposed a biometric-secure cloud based e-voting system for election processes. The researcher worked on the problems of duplication of votes and high cost of ballot paper production. The objectives of the research were to design, develop and test a secure e-Voting system based on biometric fingerprint method. Histogram Equalization and Fourier Transform were used for fingerprint and iris identification. The system was successful in achieving the authentication. Samsul and Limkar [2] provided security to an online voting system with efficient and secure user authentication by providing biometric and password features to the e-voting system. The motive of this research was to work on the problem of rigging and to increase the voting efficiency. Biometrics and the concept of steganography were used to develop the system. G. Neha et al. [3] implemented a secure online voting system. The researchers were motivated by the limitations of the huge volume of papers, hindrance in time of processing of election results. The objectives of the research were to design and implement a system that would make it easier for the maximum number of voters to remotely participate and vote for a particular candidate. The use of OTP (One Time Password), IVR (Interactive Voice Response) and password were used. Anisaara, Rakhi, Ashmita, Durgesh, and Tushar et al. [4] described a smart voting system that ensured effective voting procedure and voting count. The researchers were motivated by the problem of physical checking of voter's details for identification. The objectives of the research were to design and implement a smart and an efficient voting machine. The unique key and fingerprint ID were used for authentication and the results were transmitted to the mobile phone of the election commissioner. The fingerprint biometric and unique key were used to attain verification. Trupti, Palak, Rashmi, Samit and Saurabh, et al. [5] designed an online voting system that allowed the voters to poll votes through mobile application. The problems of multiple votes by a voter and irregularity such as alteration of results at polling booths. The objectives of the research were to design, implement and test an electronic voting system using Aadhaar card. The methodology involved the use of Aadhaar cards and mobile phones. Techniques on matching the voter's fingerprint and Aadhaar ID to achieve authentication and vote's confirmation (verifiability) were presented. The problems of confidentiality, integrity, secrecy, transparency, convenience and auditability were not solved. Additionally, confirmation of votes by the voters could enhance vote buying and selling, thereby negatively affect the election outcomes. C. Tamizhvanan, S. Chandramohan, A. N. Mohamed, P. K. Pravin and V. Vinoth et al. [6]

developed an online voting system that allowed the voters to poll votes at any location. The researchers were motivated by the problems of false voting among the voters and lack of ability of the votes polled to be verified. The objectives of the research were to design and implement an online voting system using biometric fingerprint method. The methodology involved the use of fingerprint and Unique Identity Number (UID) number to implement the voting system. Algorithms that focused on the voters' pattern of ridges, valleys and UID number to achieve authentication and verifiability requirements of electronic voting systems were presented. Election officers used passwords to login for any assigned activities. The issues of confidentiality, integrity, secrecy, transparency, convenience and auditability were not tackled. Also, username and passwords of the administrative officers could be identified for results alteration. In [6], the vote's confirmation enhanced vote buying and selling which is not good for a credible and fair election. N. S. Priya and A. F. Lenin [7] was designed to authenticate the voters as well as allow vote casting. The researchers were motivated by the problem of unethical voting by the imposters often leading to false winner. The objectives of the research were to design and implement an Aadhaar based voting system using fingerprint method. The system design involved the use of fingerprint Unique Identity Number (UIDAI) number to implement the voting system. Algorithm that integrated the voters' fingerprints and Aadhaar numbers was presented. The problems of achieve confidentiality, integrity, secrecy, transparency, convenience and auditability of e-voting functional and security requirements were not tackled. M. Ravindra, B. Shildarshi, S. Tushar, J. Shelke, S. Rout and S. Sahastrabuddhe, et al.[8] was on the Aadhaar based biometric voting system. The main goals of the research were to design and develop an online voting system based on Aadhaar cards. Aadhaar cards and the fingerprint for authentication to implement the voting system. Voter's fingerprint and aadhaar card were used for authentication. The problems of confidentiality, integrity, secrecy, transparency, convenience and auditability were not tackled. The cost estimation of producing Aadhaar cards is high. M. J. Nithya, G. Abinaya, B. Sankareswari and M. L. Saravana et al.[9] was on iris recognition based voting system. The movement of the voters' ID cards from one geographical location to another could either be lost or forged by the imposters leading to fake voting. The main objectives of the research were to design and implement an iris recognition based voting system. The iris pattern of the voter was coordinated with the pre-stored image in the database which was calculated by the hamming distance. Presentation of a hamming distance technique on voter's iris to attain authentication. The issues of confidentiality, integrity, security, transparency, convenience and auditability of e-voting functional and security of e-voting security requirements were not tackled. Also, iris could be affected by diseases. The research of S. Nithya, C. Ashwin, C. Karthikeyan and K. M. Ajith et al. [10] was on an advanced secure voting system with the internet of things (IoT) towards achieving free and fair election. The problems of unfaithful voting by the imposters and slack in the collation of election results thereby leading to delay in results announcement. The objectives of the research were to design, implement and test an advanced secure voting system with IoT. The ridge and valley features extraction method were used for authentication. The issues of confidentiality, integrity, secrecy, transparency, convenience and auditability of e-voting functional and security requirements were not tackled. The results over unprotected network are prone to attacks.

## PREVIOUS METHODS OF VOTING
1. Paper-based voting: The voter is provided with a blank ballot and use a pen or a marker to indicate he want to vote for which candidate. Manual counting of ballots is a time and labour consuming process, but it is easy to manufacture paper ballots and the ballots can be retained for verifying, this type is still the most common way to vote.
2. Lever voting machine: Lever machine is distinctive equipment, and each lever is assigned to the candidates. The voter pulls the lever to vote for his choice of candidate. This kind of voting machine can count up the votes automatically. Because its interface is not easily operated enough, giving some training to voters is necessary.
3. Postal Voting: In this method the ballot papers are distributed to electors (and it is returned) by post in contrast to voting at a polling station. This is mainly available to limited individuals who have inability to travel to a designated polling place.

## PROBLEMS WITH THE EXISTING VOTING SYSTEM
1. Costly and Time consuming: The process of gathering data and entering this data into the database takes too much time and is expensive to conduct. Time and money is depleted in printing data capture forms, in preparing registration stations together with human resources, and there after advertising the days set for registration process including sensitizing voters on the need for registration, as well as time spent on entering this data to the database.
2. Involves lot of paper work: The process involves too much paper work and paper storage which is difficult as papers become bulky with the population size.
3. Human Error: Errors are part of all human beings; it is very unlikely for humans to be 100 percent efficient in data entry.

## PROPOSED SYSTEM
The system has the administrator and voter's side of the user interface. The admin user is in charge to maintain and manage the data of the system and the voter side which is where the voters will choose their candidate and submit their votes. The benefits of online voting over the common voting method is that the voters have the choice of voting at their own free time. It also reduces on errors of vote counting. Identity of the voters are submitted in a database which can be queried to find out who of the aspirants for a given post has the highest number of votes. The objective of the work is that it will use the ID and password created by user to register him/her in the voting site, through this all the details of voter are saved in database. And it will act as the primary security to the votes system.

## DESIGN AND FEATURES
Users:
- Admin
- Voter

Admin Features:
- Login
- Manage Candidates
- Manage Positions
- Check Poll Results
- Update Password
- Update Profile

Voter/User Features:
- Registration
- Login
- Give Vote
- Logout

**RESULT**

This Online Voting System is having a voter side and an admin side. The admin will handle all the data and look after the management of the voting process. We have developed a system which is efficient in time saving, cost saving, fair management than the previous systems. Each voter can cast the vote online and she/he does not need to reach the polling booth and wait in the queue.

**CONCLUSION**

Our online portal benefits voter to cast his/her vote via internet without going to voting booth. This system gives quick access, more security levels, high flexibility and efficiency. It also eliminates the chances of fake person casting vote or bogus voting. It also minimizes man power and unwanted human errors. It provides speedy results of elections which are completely accurate. Our system focuses on reducing the time and paper work. Hence the online voting system make all the voting process fast, efficient and provides security to the votes.

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