Secure Voting System for College using Web Development

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ABSTRACT: The project "Secure Voting System for College" aims creating a system through which the voting process for college representative, subject electives and for various discussion topic is made easier in colleges. In the current system, voting is performed by using ballot paper and then counting is executed manually. This is a time consuming process and involves manual effort. It might also lead to the counting of invalid votes. All the above mentioned tasks are eliminated in these process. In this system the voting and counting both will be automated. This saves time and also avoids the error that might occur during the election process. The results of these system will show that security and performance of the system are according to expectations.

KEYWORDS: manually, eliminated, automated.

I. INTRODUCTION

Voting schemes have evolved from counting hands in early days to system that include paper, punch card etc. Electronic voting systems provide some characteristics different from the other traditional technique such as accuracy, flexibility, mobility and verifiability. Secure Voting system is a voting system in which any voter can use his/her voting rights to vote his/her candidate securely based on the certain parameters of verification and validation. These parameters will describe the functional and logical characteristics of these system. This voting systems is simple, attractive and ease to use. It reduces manual efforts of counting votes whereas the counting of large amount of votes will be automated by the system without facing any chances of error. But considering the other phase of these system there can be software failure issue. Hence the voting system would be developed by considering all the facts and phases of the software requirements and needs.

II. LITERATURE SURVEY

In recent years, many literatures, efforts and real world solutions had been developed with the new challenges. The use of insecure & incorrect implementation of technologies resulting in security breaches that have been reported previously. These challenges and concerns had been resolved in order to create trust among people for voting. All computer scientists who have done work in electronic voting system they seems to agree that electronic voting does not meet the requirement of public elections and the currently used voting systems need improvement. The General Elections of 2009 brought an attention to the problems with the current methods of casting and counting votes in elections. Most of the people agreed with the fact of changing the current system of voting but there is always an disagreement on how the changes should be made. Moreover considering the fact, works nowadays are done with less human effort and less paper work.

Other researchers who have done their work in E-voting, they may not explicitly mention the idea of voting from remote poll sites, even though their work is nonetheless relevant to any effort at designing or implementing a remote poll site for voting system. Lorrie Bellis[1] acknowledges the problem inherent in every voting apparatus, but doesn't prefer an over recommendation for one technology over the rest on her site. Other Academecians like Peter Neumann [2] focused on the problem that on faces while developing and implementing a truly secure voting system. This idea often reminds us of Ken Thompson's Turing acceptance speech that "We really can't trust the code which we did not create ourselves". Therefore one should be very persist of suspicious proprietary voting machines and their makers who insists that we should "just try them".

Jambhulkar, Chakole and Pradhi [3] proposed a novel security for voting systems using multiple encryption schemes. It provides security from voting machine to voting poll and from voting poll to voting server. The main aim of these security was to avoid DOS attacks. Security provides submissive as well as active interloper. This system is designed to take a judgement of certain issues. Therefore, paper used cryptography introduced to overcome the pros of

digital signature. Encrypting the send forth vote to client server and after that to voting sever with the help of net. After sending the encrypted vote ,the votes gets decrypted at sever side before counting.

Pashine, Ninave and Kelapure [4] proposed an android platform for online voting system. This application provides security to voter and its comfort to voter system. Voter does not need to go to Polling booths to caste their vote instead they can vote from home itself. It provides the option of gesture recognition for the voter to authenticate themselves but authentication is the problem in android platform.

The most secure part lies on securing the vote casted by the user. The casted vote is encountered and sent to admin [5]. However only the admin has the permission to access the database. Even while storing the vote count it goes to the admin in the form of number showing who is in the lead hence it becomes a secured data. At any moment, the admin only has the permission to access the database. To avoid fraud voters and fraud votes, the use of UIN id is used which is unique for every individual. Using UIN id is a fair concept which will avoid the chances of revoting. Some flag indicating that the user status (voted or not) is maintained at the server. Whenever user casts the vote the flag field is updated and can be referred for future analysis. This flag field is helpful to collect information about percentage of voting which will act as a reference data for predicting the winner.

III. PROPOSED METHODOLOGY

The main aspect associated with this project is "**Authentication" and "Security**". **Authenticity** here refers "an Individual cannot vote in false identity of other Individual and can only vote for one time" whereas **Security** here refers to "People who are not from the specified college, they cannot vote", followed by the authentication of Biometric scanner which is unique for every individual.

The objective of these voting System is to design, implement and validate that will exhibit as many of the characteristic as possible :

1. Convenience - A system is convenient if it allows voters to cast their votes quickly, in one session, and with minimal equipment or special skills.

2. Security - Following methods will be implemented in these project :
- UIN verification
- Password verification
- Biometric verification.

3. Synchronization - Provides Synchronization between voter and the admin.

4. No Spoiled Ballots - There can be no ballot errors, and depending on the system, no spoiled ballots because the computer will not permit it.

5. Greater Secrecy - By voting electronically and therefore unassisted, these electors are afforded a greater degree of anonymity when casting a ballot. Enabling secrecy for these groups enhances the equality of the vote.

All the candidates and voters must register themselves first and after that they can choose to vote their leader after login to voting system using UIN no and password or by scanning/verifying their thumbprints through Biometric scanner. The voting system contains:
1) Voter's details in database.
2) Candidate's details in database.
3) Voters and candidates ID and password.
4) Collection of total number of votes.

The intended voting system can be defined using four phases:
1) Registration phase.
2) Authentication phase.
3) Voting phase.
4) Counting phase.

This voting system is developed to be used by everyone with simple and self-explanatory GUI interface. All the information entered by user will get stored into database. At the time of registration voter has to enter all the information like name, email, UIN no etc. to verify himself. If the UIN no is matching then only voter can proceed further and can enter and register.
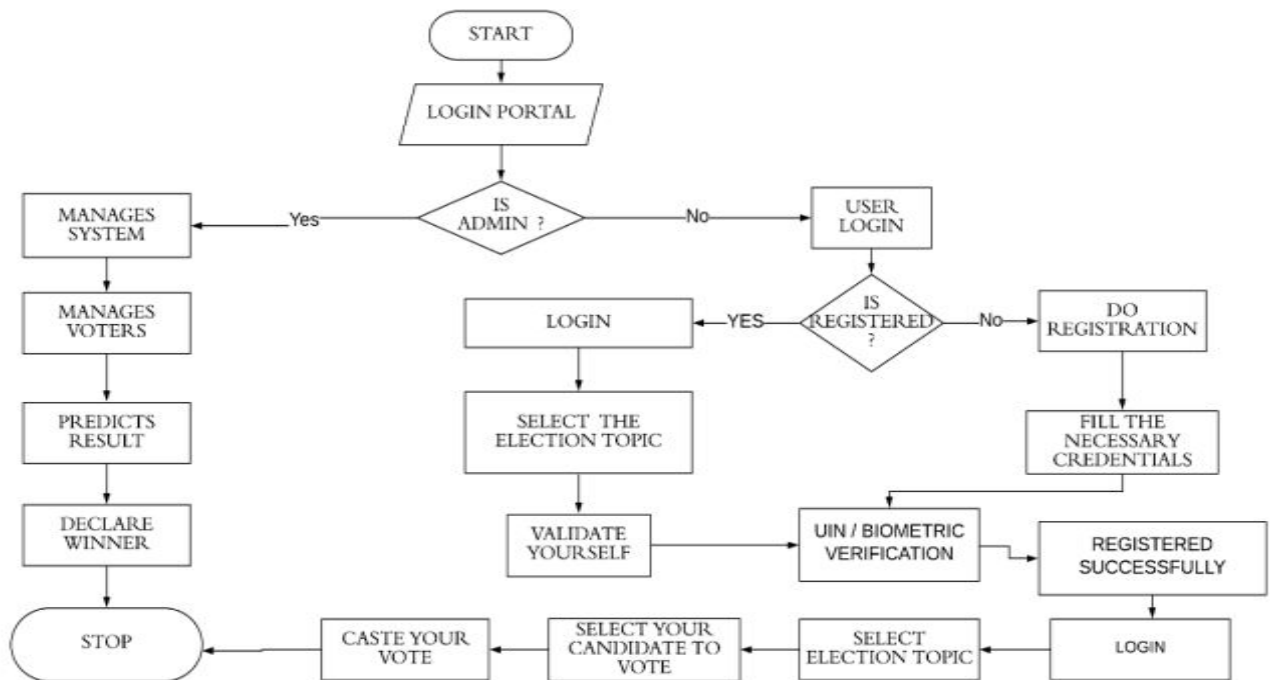
Fig. 1. Flowchart of Secure Voting System

Algorithm isAdmin()

    a. if user is "ADMIN" then
         i. LOG IN
        ii. Enter Student's UIN no into database with particular branch and year of Student
               1. to avoid outsiders to vote
      iii. Set Elections
      iv. Set Candidates for Elections
       v. Declares Winner
    b. end.

Algorithm isStudent()

    a. if user is "STUDENT" then
         i. LOG IN
        ii. Choose Elections
      iii. Votes to particular candidate

    b. end

Fig. 2. Algorithmic implementation for Admin & Student

IV. **RESULTS AND ANALYSIS**

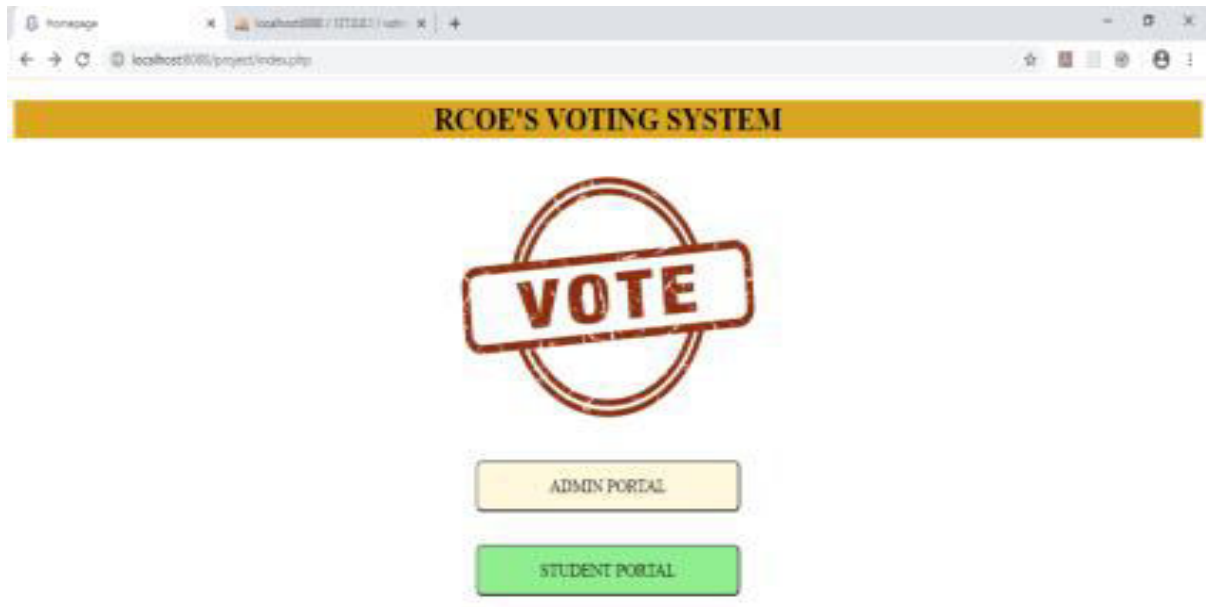1. The project starts with the login page with the option of Admin and Student login.

Fig.3. Login Page

2. If Admin logs in successfully, the Admin panel has following options :

- Add elections
- View Elections
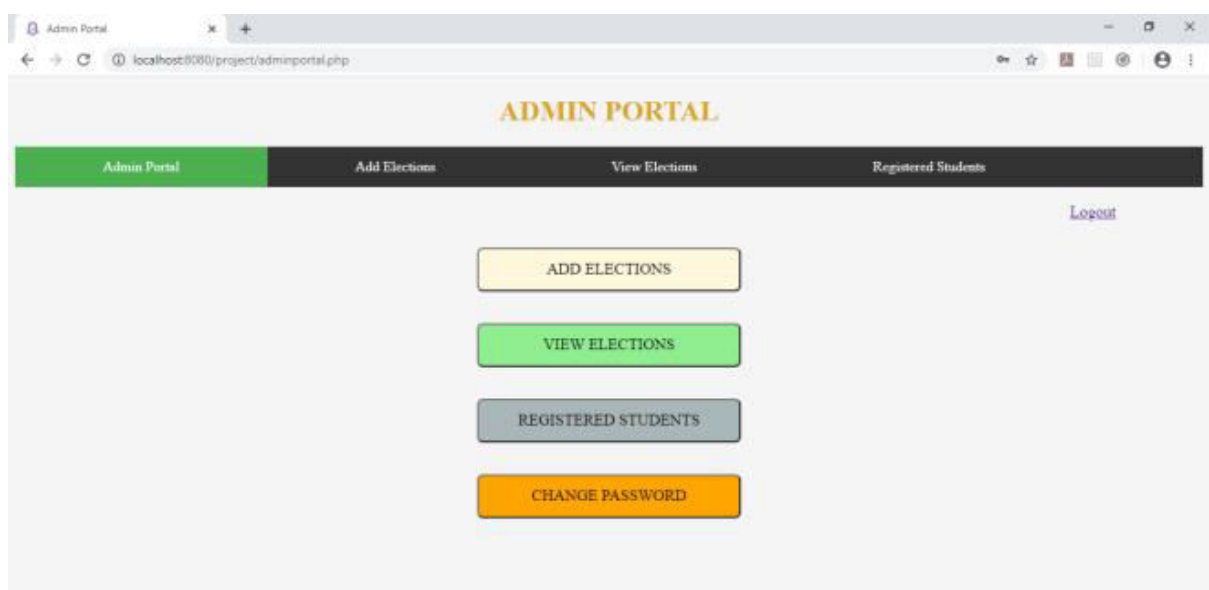- View Registered Students
- Change Admin's Password

Fig.4. Admin Portal

3. If Student logs in successfully, then student has to select the election topic to vote his/her candidate
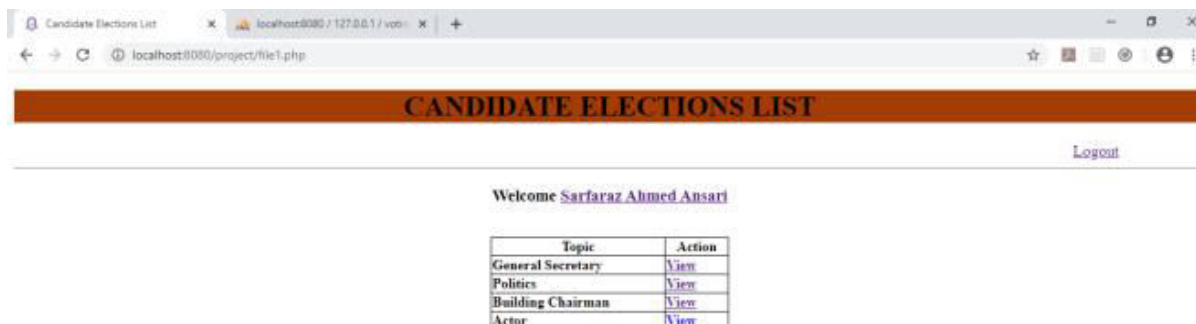

Fig.5. Election topic

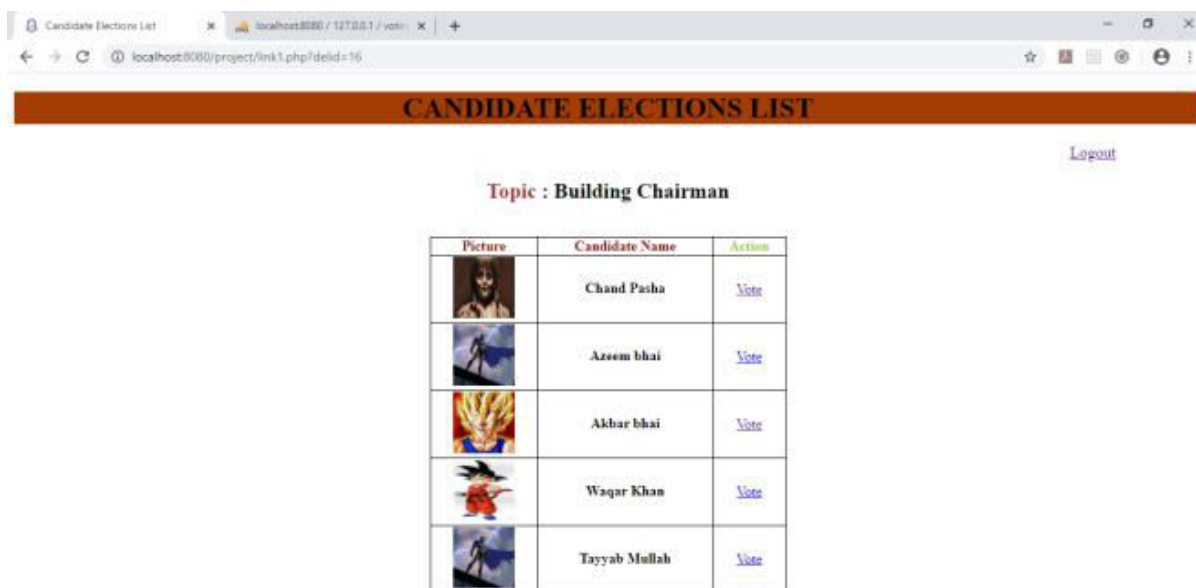4. After selecting the election topic, user votes his/her candidates and logs off

Fig. 6. Vote Candidate

5. Thus after the successful execution, rectification and verification the project was in excellent and successful execution of pronouncing the winner of the election.

V. CONCLUSIONS

This project will help in elections that are held in colleges related to various topics such as selecting college representative, subject electives and on various discussion topics. The student has to first register himself/herself as a voter undergoing through various verification such as UIN no verification, Biometric Verification, so there is no chances of revoting or proxy voting. The usage of these system will reduce or remove unwanted human errors. In addition to its reliability, these system can handle multiple modalities and will provide better scalability for large elections.

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