

HIGHLY SECURED ONLINE VOTING SYSTEM FOR COLLEGE

PROF. S. M. Patil

Akshaya Patil
BE Student
Dept. of Information Technology,
Bharati Vidyapeeth College of Engineering
Navi Mumbai, India.
akshaya.lp14@gmail.com.

Snehal Walunj
BE Student
Dept. of Information Technology,
Bharati Vidyapeeth College of Engineering
Navi Mumbai, India.
snehal.swalunj17@gmail.com.

Abstract

The word “Vote” means to choose from a list, to elect or to determine. The project “**Online voting system**” aims at creating a system through which the voting process for collage representative is made easier in collages. In the current system, voting is performed by using ballot paper and then the counting is executed manually. This is a time consuming process and involves manual effort. It might also lead to the possibility of invalid votes. All the above tedious tasks are eliminated in the above process. In the system discussed here, the counting of votes is done by using a computer. This saves time and also avoids the errors that might occur during the election process of collage. The system is designed with the Android.

Internet voting will allow the casting of electronic ballots from virtually any location around the world. Elections may be organized in many different ways. *Paper-based elections* make use of paper ballots, while *automated elections* make use of some kind of voting machines that automate the voting and/or tabulation procedures. When the voting machines are actually implemented by computers, we talk about *electronic voting*. *Online voting* systems are much more formal than online polling systems, because they seek (or should seek) to accurately reflect the voters' preferences. The present report focuses on *online (electronic) voting* systems. If the network used is the Internet, this fact may be emphasized by using the term *Internet voting* instead.

Keywords- *Synchronization Flag, Message Digest, Spoiled Ballots, Punch Card.*

I. INTRODUCTION

The Mobile voting system (MVS) also known as M-

voting is a term encompassing several different types of voting embracing both electronic means of counting votes. Electronic voting technology can include punched cards, optical scan voting systems and specialized voting kiosks (including self contained direct-recording electronic voting systems or DRE). It can also involve transmission of ballots and votes via telephones, private computer networks, or the internet.

Mobile voting is an electronic way of choosing leaders via a web driven application. The advantage of mobile voting over the common “queue method” is that the voters have the choice of voting at their own free time and there is reduced congestion. It also minimizes on errors of vote counting. The individual votes 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.

With the “M-VOTING SYSTEM”, a voter can use his/her voting right online without any difficulty. He/She has to register as a voter first before being authorized to vote. The registration should be done prior to the voting date to enable data update in the database.

Internet voting systems are appealing for several reasons which include; People are getting more used to work with computers to do all sorts of things, namely sensitive operations such as shopping and home banking and they allow people to vote far from where they usually live, helping to reduce absenteeism rate.

II. LITERATURE SURVEY

All computer scientists who have done work in or are interested in electronic voting seem to agree that online voting does not meet the requirements for public elections and that the current widely-deployed voting systems need improvement.

Voting on the Internet has disadvantages based on the areas of secrecy and protection against coercion and/or vote selling. It's such a truly bad idea that there seems to be no credible academic effort to deploy it at all. The Indian General elections of 2009 brought national attention to problems with current methods of casting and counting votes in public elections. Most people believe that the current system should be changed; there is much disagreement on how such changes should be made.

Indians advocate using the MVS since it reduces cases of uncounted, unmarked, and spoiled ballots and the cost of travelling to cited polling stations and mostly because they can vote in the comfort of their homes without any fear. Moreover, considering the fact that 63% of smart phone users in India are on Android, making an M-voting application can be feasible.

Other researchers have done work in i-voting; while they may not explicitly mention voting from remote poll sites, their work is nonetheless relevant to any effort at designing or implementing a remote poll site voting system. Lorrie Bellis[2] acknowledges the problems inherent in each kind of voting apparatus, but doesn't make an overt recommendation on her site for one technology over the rest. Some other academicians like Peter Neumann focus on the immensity of the problem one faces when trying to design and implement a truly secure voting system. They often remind us of Ken Thompson's Turing acceptance speech and the fact that we really can't trust any code which we did not create ourselves. Therefore, they tend to be extremely suspicious of proprietary voting machines and their makers who insist that we should "just trust them."

Anderson[1] gives a list of suggestions for "generic voting criteria" which suggests that a voting system should be so hard to tamper with and so resistant to failure that no commercial system is likely to ever meet the requirements, and developing a suitable custom system would be extremely difficult and prohibitively expensive.

A voting machine must produce human-readable hardcopy paper results, which can be verified by the voter before the vote is cast, and manually recounted later if necessary.

David Cranor [3] presents a very interesting scheme, whereby voters could get receipts for their votes. This receipt would allow them to know if their votes were included in the final tally or not, and to prove that they voted without revealing any information about how they voted. The security of this scheme depends on visual

cryptography developed by Naor and Shamir, and on voters randomly choosing one of two pieces of paper. Mercuris and Cranor [3] advocate the use of this technique in m-voting systems.

In the recent years, voting equipments which were widely adopted in many countries may be divided into five types

Paper-based voting: The voter gets a blank ballot and use a pen or a marker to indicate he want to vote for which candidate. Hand-counted ballots is a time and labor 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.

Lever voting machine: Lever machine is peculiar equipment, and each lever is assigned for a corresponding candidate. The voter pulls the lever to poll for his favorite candidate. This kind of voting machine can count up the ballots automatically. Because its interface is not user-friendly enough, giving some training to voters is necessary.

Direct recording electronic voting machine: This type, which is abbreviated to DRE, integrates with keyboard; touch screen, or buttons for the voter press to poll.

Punch card: The voter uses metallic hole-punch to punch a hole on the blank ballot. It can count votes automatically, but if the voter's perforation is incomplete, the result is probably determined wrongfully.

Optical voting machine: After each voter fills a circle correspond to their favorite candidate on the blank ballot, this machine selects the darkest mark on each ballot for the vote then computes the total result. This kind of machine counts up ballots rapidly. However, if the voter fills over the circle, it will lead to the error result of optical-scan.

III. PROJECT FEATURES

Remote Voting-We can vote for any place, no need to physically present at voting booth, which improve efficiency.

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

Security - Following methods are implemented in M-Voting

- Encrypted Password
- Reverse Password Mechanism

Synchronization-Provide Synchronization between manual voting and mobile voting with help **Synchronization Flag**.

No spoiled ballots-Finally, all types of Internet voting and telephone voting have the potential to improve the overall quality of ballots cast by reducing or eliminating ballot errors and by creating better informed electors. There can be no ballot errors, and, depending on the system, no spoiled ballots because the computer will not permit it.

Greater Secrecy - Internet and telephone voting could allow greater secrecy for special populations of electors with disabilities (including visually or hearing impaired). 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.

IV. SYSTEM ARCHITECTURE

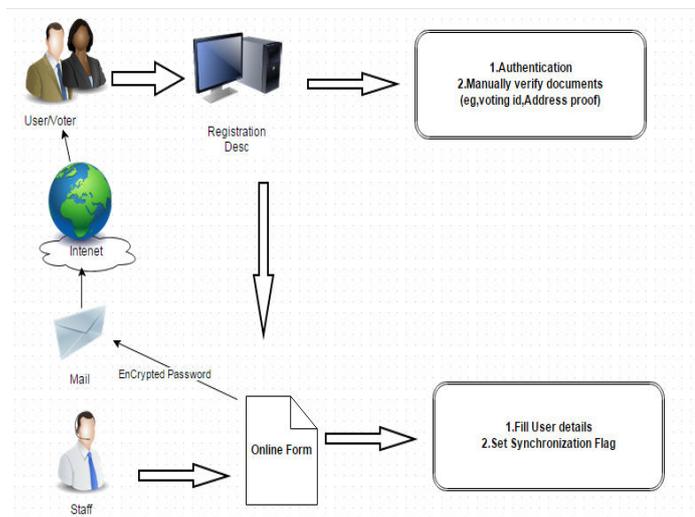


Fig 1 Registration Desk

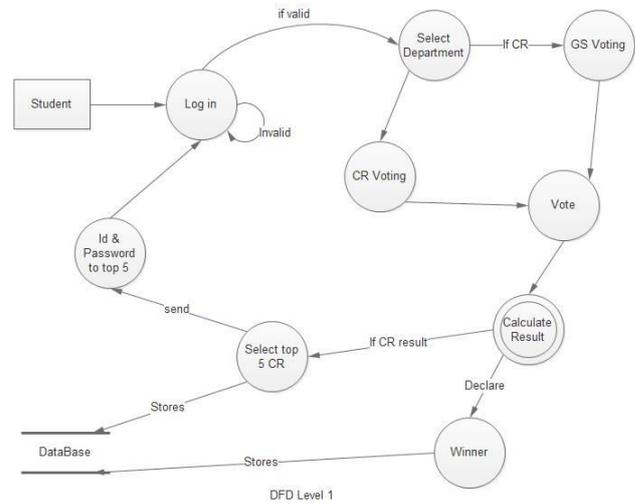


Fig. DFD level 2

Registration phase includes following use case- Sing-up or Registration Phase-

1. The voter or student visits the sign up or registration phase through the mobile voting application.
2. Fills All Registration Details-All student details are maintained by Administrator staff.
3. Set Synchronization Flag- Maintain one Synchronization flag & set to ON.
4. Encrypted Password-This will generate the encrypted password and given to the student.

Voting process of CR -

1. Mobile Voting App- Student visits the M-voting app through his/her mobile phone.
2. Voter Authentication- Authentication of voter is done in this phase by asking the voter to enter the unique ID and Password.
3. Casting a Vote- The voter cast the vote for CR.
4. Update The Synchronization Flag- Maintains and update one synchronization flag and set it to one.
5. Count Process of Votes- Automatic counting of votes is done.
6. Declare the Result of CR-once the voting is done the administrator declare the result of CR.

Voting process of UR -

1. Mobile Voting App- Selected CR of all departments visits the M-voting app through his/her mobile phone.
2. Voter Authentication- Authentication of voter is done in this phase by asking the voter to enter the unique ID and Password.
3. Casting a Vote- The voter cast the vote for UR.

4. Update The Synchronization Flag- Maintains and update one synchronization flag and set it to one.
5. Count Process of Votes- Automatic counting of votes is done.
6. Declare The Result of UR-once the voting is done the administrator declare the result of UR.

IMAGE PATTERNS:-

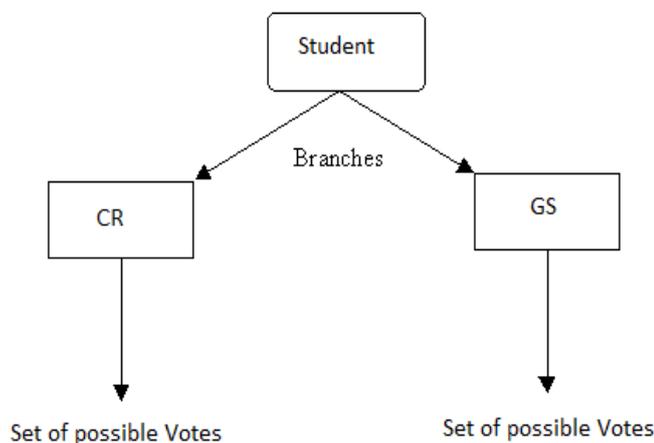
For security purpose we are going to use Image Pattern or Image Sequence. While registration the student select the number of images which are already stored in database or she/he can upload images from his/her mobile phone gallery and then He/she gives sequences of image as a pattern.

And then for next time while sign-in she/he uses that pattern as a password.

V. IMPLEMENTATION

A decision tree is a decision support tool that uses a tree-like graph or model of decisions and their possible consequences, including chance event outcomes, resource costs, and utility. It is one way to display an algorithm.

The final result is a tree with decision nodes and leaf nodes. A decision node (e.g., Student) has two or more branches (e.g., CR, GS). Leaf node (e.g., Play) represents a classification or decision. The topmost decision node in a tree which corresponds to the best predictor called root node.



VI. CONCLUSION

This M-Voting Application will manage the Voter’s

information by which voter can login and use his voting rights. The system will incorporate all features of voting system. It will provide the tools for maintaining voter’s vote to every CR/GS and its total count. There will be a database which will be maintained by the election comity of college in which all the names of voter with complete information is stored.

As this app provides better way of election for CR and UR of COLLEGE, hence we suppose that this project will have a greater scope and will provide a compact, stable system of voting.

Moreover, this app will prove to be cost effective, using, more accurate and will encourage more turn out of voters which is our basic objective for making this app.

However, there is a problem of digital gap which might make the process for some voters difficult. This can be solved by making people aware of the technology.

Technically, with this system in place, a number of such problems shall be forgotten. Hence such a technology should be put to practice to phase out some of the problems they go through during manual voting.

REFERENCES

- [1] Bellis, M. (2011). The History of Voting Machines. Retrieved November 9, 2011
- [2] Cranor, L.F., & Cytron, R.K. (1996). Design and Implementation of a Security-Conscious Electronic Polling System. Washington University Computer Science Technical Report (WUCS). Retrieved October 9, 2011
- [3] Electronic Voting and Counting – Development of the system (2013). Elections ACT. Retrieved February 11, 2013 from: <http://www.elections.act.gov.au/EVACS.html>
- [4] "Election Expenditure per elector up by twenty times in 2009 compared to first General Elections". PIB. 11 March 2014. Retrieved 12 March 2014.