E-Voting System using Android Platform

Prof. Neelima S. Ambekar, Abhijeet M. Tote, Krishna R. Kangane, Rahul N. Jagtap, Yogesh S. Sangale
Department of Information Technology Engineering, Matoshri College of Engineering and Research Centre, Eklahare, Nashik.

Abstract: The main goal of e-voting is to select the leader or candidate of people's choice. Many countries face the problems in the process of voting such as rigging votes during election, insecure or inaccessible polling stations, inadequate polling materials and also not experience personally. To overcome the above drawbacks online voting or polling system is proposed. To get acquainted with the system, the users, citizens shall be trained on how to vote online prior to the election. The e-Voting system will allow the casting of electronic ballots from virtually any location around the world. The first phase called ID2E is made for testing the viability for international voting by using SMS protocol along with the tools such as web 2.0 to create a platform for discussion about election main theme. The second phase is construction of voting prototype using android Smartphone, applications and databases to collect the vote that are available on dynamic web page. Online voting system can be used to give the precise results of votes to reveal accurate voter preferences.


1. Introduction

As technology has moved forward in several aspects of our lives, the increase in use of mechanics and electronics has also emerged. The use of mechanics in the area of e-voting was introduced as early as the 1890s with the invention of the Herman Hollerith punch card machinery for the US census, and later developed into electronic voting. Electronic voting, or e-voting, is a term encompassing several different types of voting, typified embracing both electronic means of cast the vote and electronically means of counting the votes. As the area of voting has evolved from public voting, in the early US, to the use of paper ballots with mark choices, the area of electronic voting has also evolved. Electronic voting has changed from the use of punch cards to the use of optical scan systems and specialized electronic voting. Electronic voting can also involve remote transmission of ballots via telephones or private computer networks, and the latest development is voting over the Internet. With the growing usage of computers there is also an increasing amount of both private and governmental services available via the Internet. The Internet can be used for economic transactions, tax forms, university admission services, etc., and as a consequence a development into being able to provide voting via the Internet is also considered. Electronic voting technology at polling stations can speed up the counting of ballots and provide the improved access for the disabled voters. A voting system providing remote voting via the Internet could improve the accessibility and provide an even more convenient voting process. It might also lead to greater voter turnout in elections, as well as phase out existing cumbersome processes of absentee voting, which in US still is done by mail.

2. Literature Survey

All the computer scientists who have done work in or are interested in electronic voting seem to agree that online e-voting does not meet the specific requirements for public or college elections and that the current widely deployed e-voting systems need improvement. e-voting on the Internet has disadvantages based on the areas of secrecy and protection against coercion and vote selling. It's such a truly bad idea that there seems to no credible academic effort to deploy it. The Kenyan General elections of 2007 brought national attention to problems with current methods of casting and counting the votes in public elections. Most people believe that the current system should be changed; there is much disagreement on how such changes should be done.

Kenyans in the Diaspora have begun a petition in a fresh attempt to force the electoral body to allow them e-vote online in the next General Election. They advocate using the OVS since it reduces case of not counted, not marked, spoiled ballots, cheating and the cost of travelling to polling stations. They are
opposed the use of High Commissions authority and embassies as polling stations areas. The IEBC has in the past recommended that the Kenyans outside vote at the embassies and consulates near to them. In the US or in other countries, for eg:-, Kenyans are expected to e-vote in Los Angeles and New York. Their report even proposes a framework for a latest or new voting system with decentralized, modular design.

Other researchers have done work in e-voting; while they do not explicitly mention voting from remote poll sites, their work is of no use, relevant to any effort at designing or the implementing a remote poll site e-voting system.

Lorrie Cramer acknowledges the issues inherent in kind of e-voting apparatus, but does not make an recommendation on their site for one technology to over the rest. Some other academicians like Peter Neumann focus on the immensity of the issues one faces when trying to design and implement a truly secure e-voting system. They often remind us of Ken Thompson's acceptance speech and the fact that we really does not trust any code which we did not create ourselves. Therefore, they tend to be the extremely suspicious of proprietary voting machines and their makers who insist that we should trust them.

Neumann gives a whole list of suggestions for the "generic e-voting criteria" which suggests that a voting system should be so hard to be tamper and so resistant to the failure that no commercial system is likely to ever meet requirements, and developing a suitable system would be the extremely difficult and expensive.

A e-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 required.

David Charm presents a very interesting scheme, whereby voters could get receipts for their vote done. This receipt will allow them to know if their votes are been included in the final tally or not, to prove that they are voted without revealing any data about how they voted. The security of this scheme depends on the visual cryptography developed by the Shamir, and on voters randomly choosing one of 2 pieces of paper. Mercuri and Neumann advocate the use of this method in the e-voting systems.

In the recent years, voting equipments which were been widely adopted in many countries and they are divided into five types:-

1. Paper-based voting: The voter gets a blank ballot and uses a pen to indicate what he want to vote for which candidate. Hand-counted ballots is a time and labor consuming process, but it is been easy to manufacture paper ballots and the ballots can be retained for the verifying, this type is still the most common way to vote.

2. Lever voting machine: ever machine is peculiar equipment, and each level is been assigned for the corresponding candidate. The voter pulls the lever to poll for his favorite candidate. In this way voting machine can count up ballots automatically. Because its interface is not user-friendly enough, giving some training to voters is been necessary.

3. Direct recording e-voting machine: This type, which is abbreviated to DRE, integrates with keyboard touch screen for the voter press to poll. Some of them lay in voting records and counting the votes is very fast. But the other DRE without keep voting records are doubted about its accuracy.

4. Punch card: The candidate coming for vote uses metallic hole-punch to punch a hole on the blank ballot. It can count votes automatically, but if the voter’s per formation is incomplete, the result is probably determined wrong.

5. Optical voting machine: After each voter fill a circle corresponding to their favorite candidate on the blank ballot, this machine selects the darker mark on each ballot for the vote then computes the whole result. In this way of machine counts up ballots rapidly. However, if the voter fills over the circle, it will lead to error result of optical-scan.

### 3. Proposed System

In this paper, we propose client/server web and android application software. Various social factors/values largely determine the rules and regulations that govern the different voting process. For different college level elections there are manual paper based elections that take place. There is a possibility of manipulation of votes and one of the important challenges that an e-voting system faces is some students might vote more than once. For this purpose our system uses the permanent registration numbers that is unique for every student. Another requirement is the transparency in the electronic voting process. The voter votes using either a computer or android mobile phone and the voter does not have the insight of how the votes are being translated or counted. We are making easy and efficient use of communication mediums like e-mails and sms service for ensuring that the votes are delivered successfully. The manual and paper based election process carried out in colleges can be time
consuming and prone to security breaches. This project is implemented to allow each and every student to actively participate in the college election process irrespective of the place. This is done by the android application which will accept the votes of different student using the application. Administrator will register all the students with their permanent registration no. and roll numbers, and the candidates may apply for any desired post. The student will login through the permanent registration number and password. On the date of election the students can vote to the desired candidates through the application. Students not having android phones can vote through the web application. Result evaluation will take place on the server side and will be posted. Other functionalities are:

- Authentication will be done through permanent registration no. and passwords.
- Notification messages will be sent about the election date and timings.
- A separate page for suggestions. Students can like or dislike them.
- Message box for the elected candidate where messages can be sent by students only to a particular candidate
- Searching for a particular candidates profile can be done.
- Result evaluation will take place on the server side and will be posted.
- Steganography will be used for secured data transmission so that manipulation of votes can be Avoided User-id and password to every user through mail

3.1 Android

Android is a comprehensive software stack of mobile devices that includes an operating system, middleware and the key application. This rich source of software bunch is used in Mobile Technology through its innovation module of The Android Software Development Kit (SDK). Android can be considered as a unified software package. This software package includes an operating system; develop Android applications using the programming language of Java. Android is built on open Linux Kernel this particular software for the Mobile Application is made to be open source, thereby giving the opportunity for developers to introduce and incorporate any technological advancement. Build on custom virtual machine android gives its user the more addition usage and application power, to initiate an interactive and efficient application and operational Software for your phone.

3.2 Attribute Suggestion

In this domain, we study and describes solution for the ‘attribute suggestion’ problem. From the problem definition we can determine two properties for determine and suggesting attributes for a document:

1] First, the attributes must have high level querying value (QV) with respect to the query workload. That is, they must appear in large no. of queries in query workload, because the random attributes in workload have a large potential to improve the visibility of document.

2] Second, the attributes must have high level content value (CV) with respect to document textual data. That is, they must be relevant to textual data. Otherwise, the end user will probably dismiss the suggestions and document will not be properly annotated.

4. Conclusion

The main aspect behind e-Voting System is that it enabled us to bring out the new ideas that were been sustained with us for many for many days. This project offers the voters to cast easily through internet. Vote counting is also made easy by the e-Voting System since it’s just a matter of querying the database. e-Voting System is used by a many countries today. Developing a good system is critical to the success of the system to prevent system failures or errors and to gain the wide acceptance as the best method available-Voting System will be an inexpensive, and less time consuming method once system exhibiting national standards and the above mentioned characteristics is implemented.

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6. References


