DESIGN AND IMPLEMENTATION OF BALLOT MALFUNCTIONING AVOIDANCE SYSTEM SECURITY OPTIMIZATION

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Abstract-- Voting has existed for several years and the process of voting has progressed over the years. Voting has migrated in some countries from hand ballot systems to more electronic means such as Internet voting. An electronic voting system requires a higher level of security than an E-commerce system, the platform over which electronic voting is carried out goes a long way in determining the security requirements they can achieve and its practicability in actual elections. Traditional voting systems also has its shortcomings in terms of lack of Voter's mobility, flexibility, individual verifiability and accuracy of the tallying process due to human errors which can be addressed using an electronic voting over a secure platform. These issues have inspired this thesis in which I intend to propose an electronic voting scheme which is more secure and offering maximum facilities.

Keywords— Voting; Internet voting; Security; Electronic voting; E –commerce system; Ballot system

1. INTRODUCTION

Electronic voting (also known as e-voting) is a term encompassing several different types of voting, embracing both electronic means of casting a vote and electronic means of counting

votes. Electronic voting technology can include punch cards, optical scan voting systems and specialized voting kiosks (including self-contained Direct-recording electronic (DRE) voting systems). It can also involve transmission of ballots and votes via telephones, private computer networks, or the Internet. Electronic voting systems may offer advantages compared to other voting techniques. An electronic voting system can be involved in any one of a number of steps in the setup, distributing, voting, collecting, and counting of ballots, and thus may or may not introduce advantages into any of these steps. There are two different forms of voting: distance and presence voting. In presence voting, a voter can cast his or her vote in a polling station under the supervision of the election's administration. Examples for presence voting are conventional elections in polling stations or voting with e-voting machines. In distance voting, the voter acts without the supervision of the electoral commission and casts his or her vote from a place other than a polling booth, such as casting absentee ballots via mail or internet voting.

2. PROJECT TECHNIQUES

Most of the countries in the world e-Voting system have been used. Due to rapid growth of technology security problems are getting increased. So instead of developing e-voting systems, also there is a lot research work is being done to make these systems more secure. Nowadays in some e-Voting systems, there is a password is issued to individuals to make the system more secure. Nowadays a lot of research work is going on developing more secure methods and one of the secure methods is the usage of biometrics. Biometric based systems are those in which human physical characteristics like face shape, finger prints, etc. are being used for identification and authentication. Fingerprint recognition method and ID system in biometric methods are frequently preferred because applications of them are easy and low-cost. Every human in the world has a unique Fingerprint so it is impossible to steal or lose so there is no need to remember fingerprints like if individual passwords or personal identification numbers (PINs) in card technology to keep systems secure. Besides, every finger has distinctive characteristics because fingerprints of every finger of a person are different that is why majority of secure systems are using fingerprint method alone or combination with other biometric feature to make systems more secure in this rapidly advancing technology era. That is why in this e-Voting systems are identification of voter is based on fingerprints.

3. SYSTEM ANALYSIS

Electronic voting refers to the use of computers and telecommunication systems to handle an entire or certain aspect of an electoral process. Generally, e-voting systems consist of six main phases:

Voter's registration: The voter's registration is a phase that facilitates the collection of data of prospective voters and the subsequent transfer of such data into the computerized system.

Authentication: The authentication is a phase that verifies the voters access rights and franchise.

Voting and votes saving: The voting and vote saving is a phase where eligible voters cast votes and e-voting system saves the votes cast by voters.

Vote management: The vote management is a phase in which votes are managed, sorted and prepared for counting.

Vote counting: The vote counting is the phase where votes are decrypted and counted and to output the final tally.

Auditing: The auditing is a phase that ensures that eligible voters were able to vote and their votes count in the computation of final tally.

4. PROPOSED METHOD

We have devised two key features after reviewing the problems from the existing system and some works related to e-voting which will provide the required solutions to these problems.

Two key features are:

1) Maintenance of Database System

2) Automated Registration System

MAINTENANCE OF DATABASE SYSTEM

We are introducing here computerized registration form for each voter through which voter details including name, area, etc. can be entered .From these details an algorithm will generate a unique id and this id will be stored under the fingerprint of the voter. Now the question arises when the fingerprint and the details should be collected. This registration system will retain a single database named Population Database for all the citizens of India. It will have two segments first one is Primary Database that is for 0 years old to less than 18years old citizens. The second segment Secondary Database will keep the data for the people who are at least 18 years old**.** Third segment is Voter Database that will contain only

the living existing voters. Citizens of India will be migrated automatically from the primary database to secondary database when they will become 18. People who have expired already won't be migrated to the voter database but they will be in the population database and their status will be dead. People who have already migrated to the voter database and then suppose he or she has died. He or she will be deleted from the voter database but they will be still there in the primary or secondary database. This approach will save the space of the voter database as well as it will make the system more accurate. The inputs of the primary database will be collected from the 'X' who has the information of all aged people of India and the information of death people will be collected from 'Y' who has the records of the death people of the country.
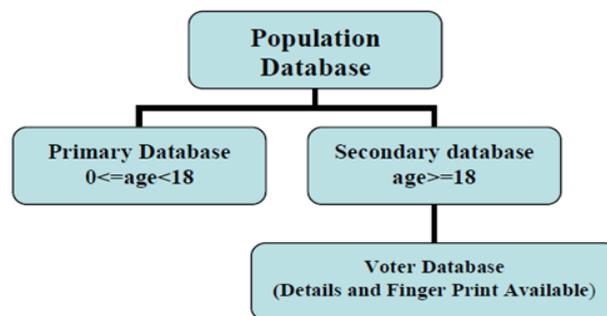

REGISRATION SYSTEM

The election commission authority will collect the details as well as finger prints from the people who are at least 17 years. Birth certificate, H.S.C or S.S.C certificate will proof one's age. People who don't have this certificate may use chairman certificate or commissioner certificate to proof their age. People who won't give their details and finger prints to the authority their status will not be registered but he will also be migrated to the secondary database automatically again he won't be migrated to the voter database. They will be able to register later and then he will be migrated to the voter database immediately. The authority will collect the details from even 17 years old people so that if any person becomes 18 years old between the time of collecting data and the election he or she will be able to give the vote. Even the people who live outside the country will be able to give his or her vote. It doesn't matter whether he has the birth certificate or H.S.C or S.S.C certificate. His passport will prove his legality for being the citizenship of a country and that will also proof his age. But he needs to be registered that means he has to give his details as well as finger print to the

authority. Then he will be able to attend the election even he gets back to the country on the day of the election.
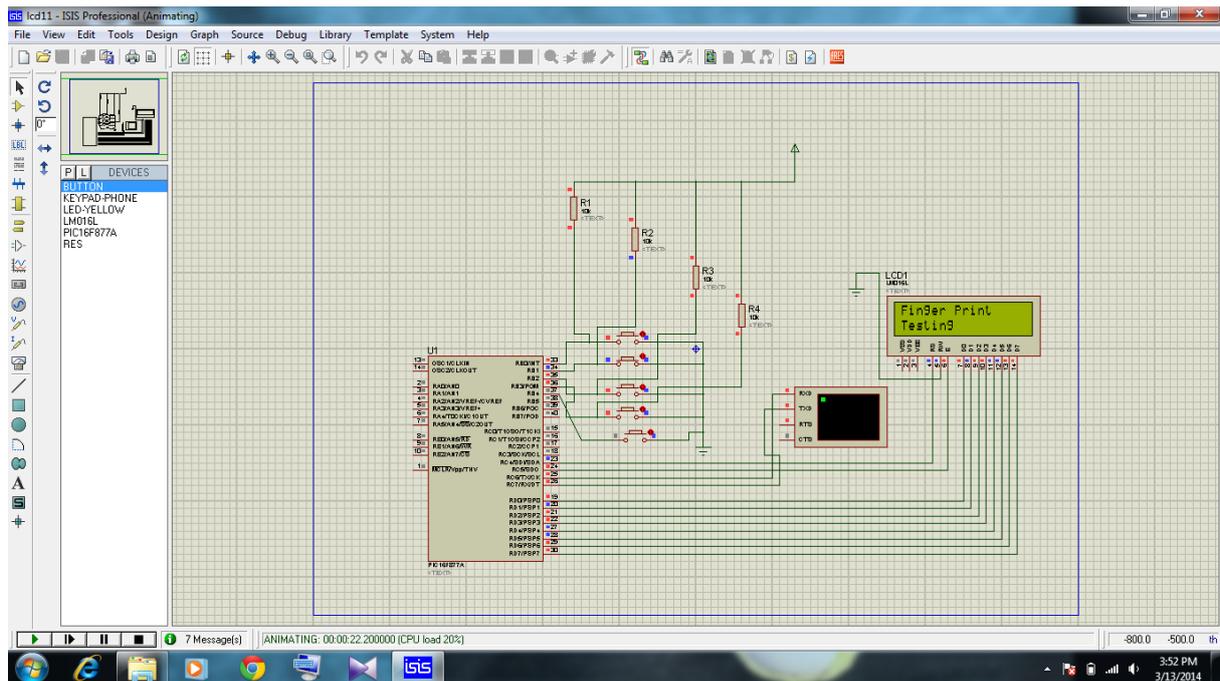
4.1 BLOCK DIAGRAM
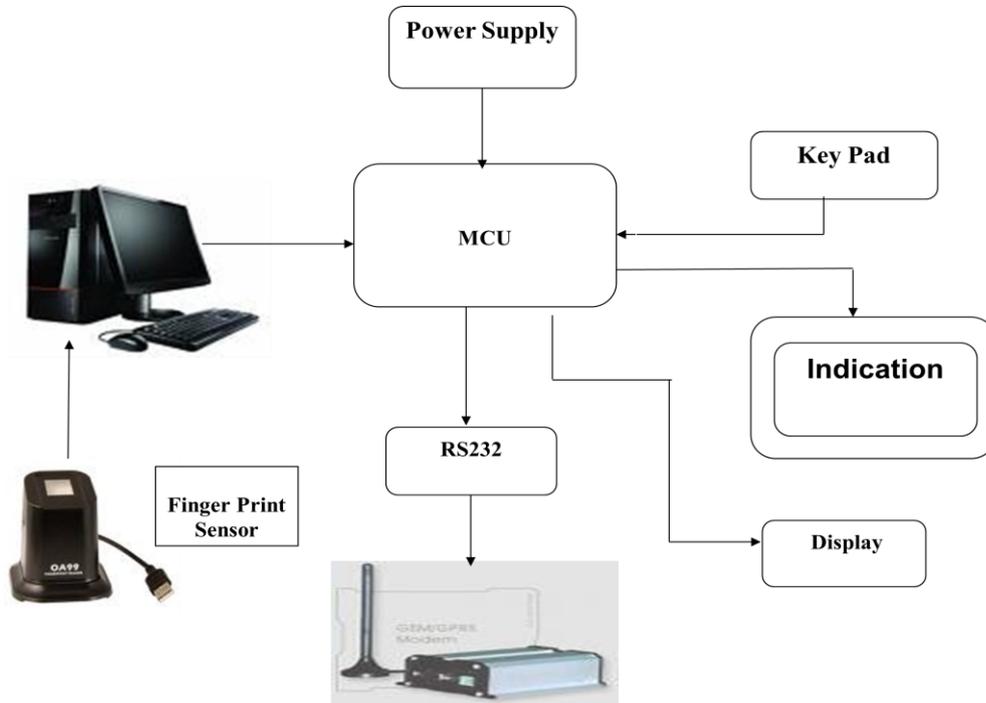
We have two sections one is validating section another one is voting section. The validating section has finger print sensor and computer.

The finger print sensor gets the finger print of the voters and sends to the PC. In PC the finger print image is compared with existing image. If the image is matched, the computer sends the command to the micro controller that the person is valid. After receiving the command the micro controller allow the voter to poll their vote. The voter poll the vote up to the voting time allocated by the election commissioner. If anyone tries to poll their vote beyond the time limit, the GSM modem sends the message alert to authorized person.

4.2 FINGERPRINT MATCHING

Most efficient and effective part of this system is fingerprint. Fingerprint is a unique identification for any voter. All the information about voter will be preserve against the fingerprint. At the registration period when anyone gives his/her information the system will generate an Id against that information. This Id will be protected by his/her fingerprint. If

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anyone tries to make double entry in the voter database he/she cannot make that because of fingerprint. So the system makes ensure single entry for individual. The system will not transfer the entry until his/her fingerprint provided. No one can change others information only because of fingerprint. Even administrator cannot modify others information. So all the information will be strongly preserve in the database. In this system the administrator can only excess the data he/she cannot modify anything only because of fingerprint. When any voter gives his/her vote the system will at first find his/her fingerprint at the database. It will at first find out the specific area where the vote will be cast. Then the system will check whether the specific id is block or unblock. Block means that this person has already voted unblock means opposite. So when system find Id block it will reject that vote otherwise it will cast that vote and preserve that against that fingerprint. Moreover if anyone wants to give others priceless vote he/she cannot do that. Because fingerprint is a unique identity for everyone. So the system will provide single vote for single person.

5. CONCLUSION AND FUTURE WORK

With the introduction of e-voting systems our elections processes and social lives are going to be easy, efficient and low-cost. Now in this system voters can cast their votes from anywhere in world. E-voting system must meet security requirements such as confidentiality, integrity, fairness, forgery attack, verifiability and so on. This is because E-voting system is more vulnerable than traditional voting due to the nature of digital processing of election data

which can be easily manipulated, hence may result in widespread fraud and corruption. The way the project will be extended in future is explained here.

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