

AN APPROACH TO SECURED EVOTING SYSTEM USING BIOMETRICS

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Abstract - India being a large democracy in the world election, lots of money is being spent on elections. In the current digital world, where our everyday interactions with government and other service providers are increasingly screen-to-screen rather than face-to-face. Nowadays Biometric systems are used to identify uniqueness of a person. Some of the Biometric systems like Fingerprinting, Iris, DNA, and Face Recognition.

So, an online voting system can be used which is an end to end process of enrolment, voting, recording and counting to create a digital election management platform.

Key Words: Bio-metric, Electronic Voting Machine, Fingerprints, Fingerprint sensor, Verification.

1. INTRODUCTION

Elections are the fundamental defining characteristics of any democracy that upholds the very meaning of a system that is being governed by the people expressing their choices or articulate opinions in the form of voting. The traditional electoral process vacillates around tallying manually, which is time consuming and complicated. Now the voting mechanisms have evolved from simple hand-written ballots to online voting systems. The proposed design, also have feature of being autonomous during the operational mode, which helps to diminish and eradicate the issues of hacking that happened in cases of traditional voting systems and also has an eagle eye view on the privacy constraint which directly conflicts with the capability to audit the data aptly.

The proposed system provides peoples to vote in a secure manner without any fear. The online voting system also provides the security to the voter's by storing the vote in a secure digital form, if the voter votes against malevolent candidate. This system also guarantees not to leak the vote in front of anybody. Online voting system has several important steps. The system is approachable from two sides: (i) From the Election Commission of India side who is also the Administrator. (ii) From the voter side [2].

Fingerprint scanning-essentially provides an identification of a person based on the acquisition and recognition of those unique patterns and ridges in a fingerprint. The actual fingerprint identification process will change slightly between products and systems. The basis of identification, however, is nearly the same. Standard systems are comprised of a sensor for scanning a fingerprint and a processor which stores the fingerprint database and software which compares and matches the fingerprint to the predefined database. Within the database, a fingerprint is usually matched to an OTP which is then matched to a person's name or account. In instances of security the match is generally used to allow or disallow access [3].

2. LITERATURE SURVEY

Mohammed Khasawneh, Mohammad Malkawi they proposed a multifaceted online e-voting system. The proposed system is capable of handling electronic ballots with multiple scopes at the same time, e.g., presidential, municipal, parliamentary, amongst others. The system caters for integrity of an election process in terms of the functional and non-functional requirements. The functional requirements embedded in the design of the proposed system warrant well-secured identification and authentication processes for the voter through the use of combined simple biometrics. The design of the system guarantees that no votes in favor of a given candidate are lost, due to improper tallying of the voting counts, with the proper incorporation of system Flags. Transparency of voting follows through in all phases of an election process to assure the voter that his/her vote went in favor of his/her candidate of choice. Results of the simulations show that security and performance of the system are according to expectations. These results provide the proper grounds that would guide the decision maker in customizing the proposed system to fit his particular voting needs [1].

Himanshu Agarwal, G.N. Pandey proposed an online voting system in Indian election for the first time. The proposed model has a greater security in the sense that voter high security password is confirmed before the vote is accepted in the main database of Election Commission of India. The additional feature of the model is that the voter can

confirm if his/her vote has gone to correct candidate/party. In this model a person can also vote from outside of his/her allotted constituency or from his/her preferred location. In the proposed system the tallying of the votes will be done automatically, thus saving a huge time and enabling Election Commissioner of India to announce the result within a very short period. A unique AADHAAR identity is the centre point of our proposed model. It leads to the easier verification of both voters and candidates [2].

Mr. Nikhil L. Kshemkalyani. Mr. Viraj A. Bandekar says that, the Online Voting system is made for the people of the country residing around the world and wants to vote for their representative. Using Electronic Voting may encompass a range of Internet services from a touch screen at a polling station to voting online. This Project is developed for the threat free and user oriented Online Voting System. Face Recognition is an authentication technique. The election can be conducted in two ways the paper ballot election and the automated ballot elections. The automated ballot elections are called the electronic voting. The online voting system is highly developed, and the online polling system can be replaced by accurately and directly voting online and immediate results. The online voting system is done by the internet, so it can be called the Internet Voting [3].

Taabassam Nawaz, ArashKorrani they proposed a system that automates the whole process of taking attendance and maintaining its records in an academic institute. Managing people is a difficult task for most of the organizations and maintaining the attendance record is an important factor in people management. When considering academic institutes, taking the attendance of students on daily basis and maintaining the records is a major task. Manually taking the attendance and maintaining it for a long time adds to the difficulty of this task as well as wastes a lot of time. For this reason, an efficient system is designed. This system takes attendance electronically with the help of a fingerprint sensor and all the records are saved on a computer server. Fingerprint sensors and LCD screens are placed at the entrance of each room. In order to mark the attendance, student has to place his/her finger on the fingerprint sensor. On identification student's attendance record is updated in the database and he/she is notified through LCD screen. No need of all the stationary material and special personal for keeping the records [4].

Pallavi Divya, Piyush Aggarwal, Sanjay Ojha introduced the online voting system that facilities user to vote in different languages, voting schemes in rural areas through televoting. Televoting extends to the voting by SMS (text message) via a mobile cell phone. This also facilities absentee voting. Absentee voting can be performed through e-mails. We purpose an approach for effectively user-friendly application especially targets the weak users such as elderly users. This system guarantees privacy of voters, public verifiability, and robustness against a coalition of malicious authorities. All the user must do login according to their regional languages and click on his favorable candidates to register his vote. The development and testing is done on Ethernet. While online voting system has been an active area of research in recent years, the use of insecure Internet, well documented cases of

incorrect implementations reported recently. These challenges are to be resolved so that public should cast their vote in secure and convenient way. People can cast their votes efficiently, faster and also maintain confidentiality at the same time. Proposed online voting system is a system by which any Voter can use his/her voting rights from anywhere in country [5].

3. METHODOLOGY

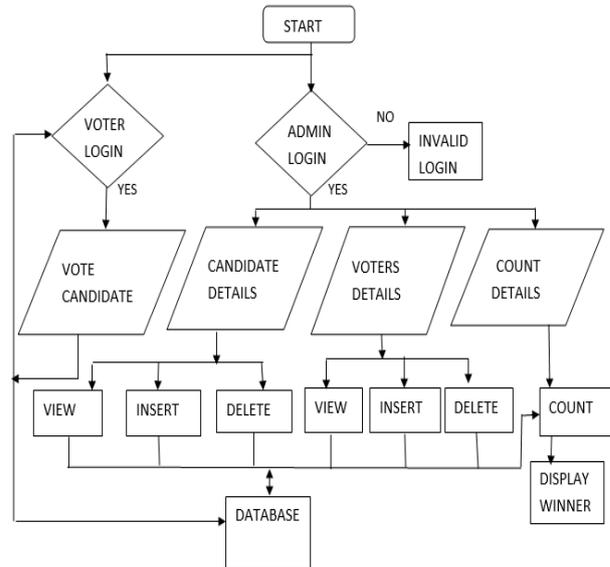


Fig 1: Block diagram

There are two modules, voter login and admin login. User information is stored in database. When the voter logs in, it verifies the information which he provides with the information stored in database, after the successful authentication of the user, he can cast his vote. Admin has access to view, insert, and delete the candidate details and voter details. He also has the control over counting and displaying the result. When the user cast his vote, the counting will automatically increment in the database.

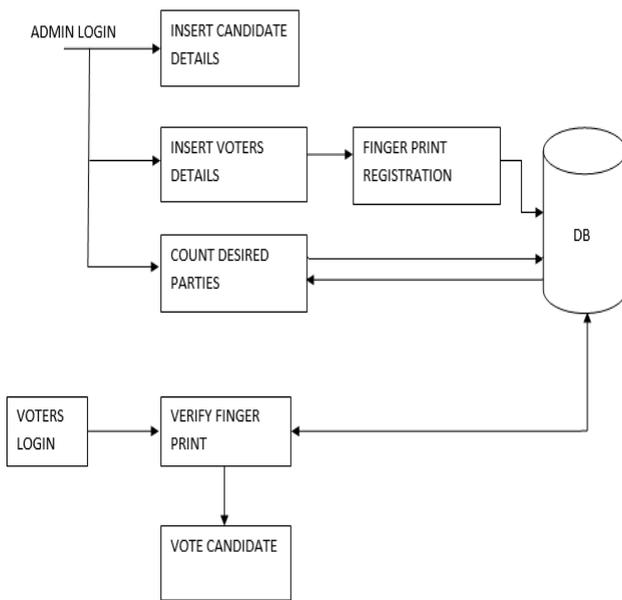


Fig 2: Workflow diagram

Fingerprint Identification Algorithm: The enrollment process this process consists of capturing a person’s fingerprint using a fingerprint capturing device. During the enrollment process, the system saves the persons fingerprint into database.

The authentication process: It is used to authenticate the claimed person. This process consists of comparing a captured fingerprint to an enrolled fingerprint in order to determine whether the two match. If the two fingerprints match, then it allow user to make transaction [3].

4. CONCLUSION

In this proposed system, online e-voting system which can tackle most of the earlier issues encountered in a conventional voting system. The new system maintains voting statistics in real-time while preserving the integrity of the voting process from the minute a voter steps in to cast his/her vote until the cast vote is registered in favor of the chosen candidate at a globally allocated DB repository.

In the proposed framework, we have tried to build a secure online voting system that is free from unauthorized access while casting votes by the voters. The server aspects of the proposed system have such distribution of authority that server does not enable to manipulate the votes. It is expected that the proposed online voting system will increase the transparency and reliability of the existing electoral system.

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