Captiosus Voting System

Gayatri Sabne[1] | Praful Saboo[2] | Uttamkumar Deo[3] | Azharuddin Shaikh[4]

[1]Department of Computer Engineering, JSPM,s JSCOE, Maharashtra, India.
[2]Department of Computer Engineering, JSPM,s JSCOE, Maharashtra, India.
[3]Department of Computer Engineering, JSPM,s JSCOE, Maharashtra, India.
[4]Department of Computer Engineering, JSPM,s JSCOE, Maharashtra, India.

ABSTRACT

Traditionally, in paper based election,voters cast their vote to select right candidate, where they simply put their vote in voting box and at the end of the voting day the votes are going to be count manually. This process was much time consuming as well as was erroneous. To overcome this drawback Electronic Voting Machine (EVM) was introduced. In EVM, Voter cast their vote by pressing the voting button which was on EVM. The Major advantage of EVM system is , the votes are counted automatically instead of manually. But the drawback of EVM machine was, the votes may get manipulated and was not secure. So to overcome all these drawbacks, research on biometric based voting system is going on. This Paper focuses on survey of different voting system using Fingerprint biometric through different algorithms and methods.

KEYWORDS: *Electronic Voting Machine (EVM), fingerprint scanner, E-voting, security*

I. Introduction

The field of biometrics was formed and has expanded on to many types of physical identification. Still, the human fingerprint remains a common identifier and the biometric method of choice among law enforcement. These concepts of human identification have led to the development of fingerprint scanners that serve to quickly identify individuals and assign access privileges. The basic work of these devices is also to examine the fingerprint data of an individual and compare it to a database of other fingerprints. Everyone in the world is born with a fingerprint that is unique; a distinct and comprehensively identifying attribute that sets us apart from the other 6.5 billon people that inhabit this world, because of this fact that the fingerprint has proven such a useful part of biometric security. The very reason that fingerprintscanners are useful can be found in this fact as well. However, this is far from the only reason they are used.

Refer fig 1 for Biometric system data flow, as system takes input from user and checks the input with stored template from database for validation. If valid then it will allow access otherwise, it will deny access.

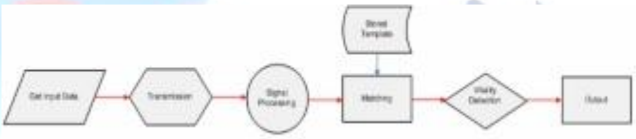


Figure 1 - Biometric System data flow

1.1 Literature Survey

Naturally calls for a fully automated online computerized election process. In addition to overcoming commonly encountered election pitfalls, electoral vote counts are done in real time that by the end of elections day, the results are automatically out [1, 2]. An architecture in which voting is done by making use of cards, this cards are designed similar to smart cards which have all details related to the voter embedded in them, hence it ensures assurability, security, verifiability and transparency into voting system[3].Clash Attacks i.e. voting machine sometimes provide same receipts to the different voters because of this election gets manipulated[4][6].A framework for electronic voting machine based on biometric verification was proposed and implemented.The proposed framework ensures secured identification and authentication processes for the voters and candidates through the use of fingerprint biometrics [5].

A computer system whose main element is an software component that maps the voting operation electronically is called an e-voting system. A direct recording electronic(DRE) machine is a special case of such a system as it implements all steps in the voting . process, from registration and ballot casting to counting. Security is a fundamental criterion for the selection and use of electronically supported election systems. To provide and assure security in e-voting systems, an integral approach that covers all parts of this complex system should be chosen. This method is also called *holisticsecurity* [7].

Design of a Distributed e-Voting system which ensures the voter confidentiality and voting accuracy using Ballot Distribution Committee responsible for distributing ballots. The proposed E-voting system, referred to as Enhanced NOTE (E-NOTE), is enhanced with a advanced protocol design and watchdog hardware device to ensure voter confidentiality and voting accuracy [8].

By using the Smart Card Web Server (SCWS) on a mobile phone Subscriber Identity Module (SIM) which will improves the authentication and helps the voter to easily vote from remote location.Remote e-voting via the Internet provides the convenience of voting on the voter's personal computer or mobile device, but Internet voting systems are vulnerable to many common attacks, affecting the integrity of an election[9].

Design of a secured E voting system using RFID tag as security so one can easily vote from anywhere to anyone .E-voting systems are becoming popular with the widespread use of computer and embedded systems. Security is the important issue should be considered in such systems[10].

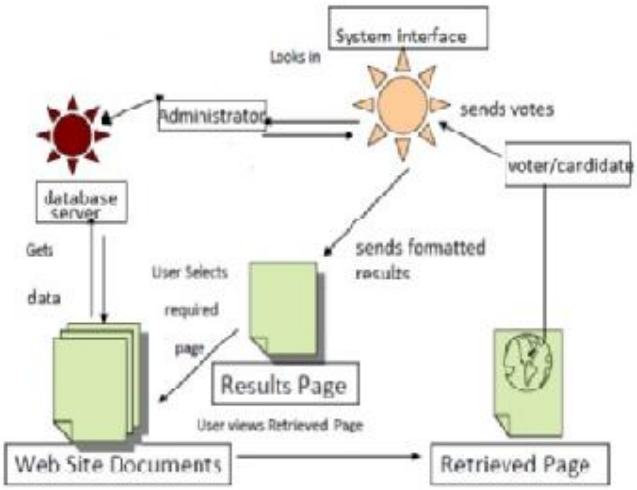
1.2 Performance Review Table

PP NO.	Paper Title	Techniques	Parameters achieved
1	A Biometric-Secure e-Voting System for Election Processes	Biometric authentication	Correctness, robustness, coherence, consistency, security
2	Design of a Secured E-voting System	Design of a Secured E-voting System	Eligibility, Uniqueness, Privacy, Integrity, Accuracy.
3	Biometric Secured Mobile Voting	Fingerprint based biometric control information and encryption along with SSL using VeriSign.	Security, Time and Cost efficiency.
4	Implementation of Authenticated and Secure Online Voting System	Universal Identification Number, Secret Voting Password andBiometric identification.	Cost effectiveness, non-traceability, Integrity, security.
5	TRUSTED SECURE ELECTRONIC VOTING MACHINE	secure study of electronic voting Machine.	Classes of Attacks, injecting Attack Codec, Difficulty of Recovery.
6	DESIGN A SECURE ELECTRONIC VOTING SYSTEM USING FINGERPRINT TECHNIQUE	Fingerprint identification.	Accuracy, transparency, security, fast results.
7	E-Voting system security optimization.	Holistic security, EVSSO Method	Secrecy of vote, publicity, transparency
8	Distributed e-Voting using the Smart Card Web Server	Smart Card Web Server (SCWS) and mobile phone Subscriber Identity Module (SIM).	Distributed architecture, security
9	E-NOTE: An E-voting System That Ensures Voter Confidentiality and Voting Accuracy	New protocol Design and watchdog hardware.	Reliability of software, confidentiality, voting accuracy.
10	SECURE E-VOTING SYSTEM WITH BIOMETRIC AND WAVELET BASED WATERMARKING TECHNIQUE IN YCgCb COLOR SPACE	Biometric and Wavelet based watermarking technique in YCgCb color space.	Mobility, privacy, security.

II. Proposed System

In this paper, we propose client/server web-enabled software architecture. Besides the main functional properties of a voting system, as described in the previous section, the proposed system must cater for several essential non-functional requirements. Of utmost importance are the requirements for correctness, robustness, coherence, consistency, and security. On the server side, a global database is maintained for all registered voters and candidates. Also, the server runs in real-time and provides backend statistics for the entire election process. On the client side, two more requirements are necessary. In order to reduce the traffic rate on the network links, a local database at the client side is required to host the data which pertains to the local voting center. The second requirement is the transparency of the voting process. In essence, a voter at an electronic voting station casts his/her vote to a computer. . The voter does not have an insight on how his/her vote is translated and/or counted. The system had secured with the fingerprint biometric device for authentication purpose.

At client side we had created 3 modules they are Candidate, Voter and Result . We did connectivity

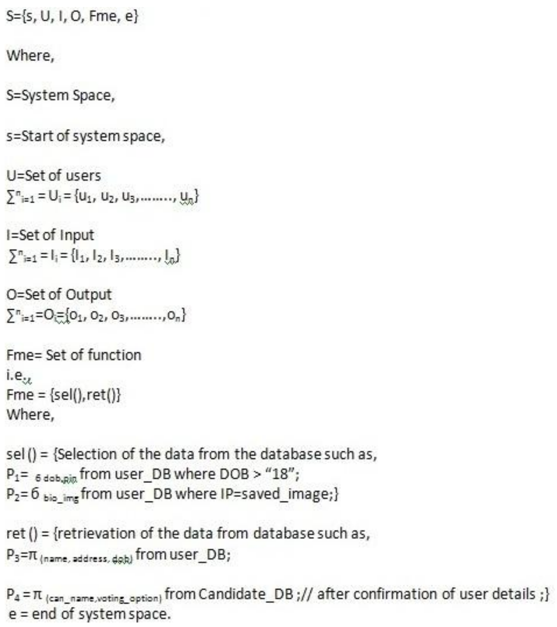


Architecture

Through the biometric we can provide the much more security. Software Requirement is Net beans and we used MySql database . First of all in Candidate module we had created a form in which we took whole information of each and every candidate and the registration form of each and every candidate then the validation will be performed and will have look weather candidate fulfill all requirements or not. Now the second module is Voter, which fetches whole information of particular voter from the registered UIDthrough dummy database which stores all information of voter from which we can come to know the pincode or constituency of voter then we will fetch only the candidates of particular constituency of voter from the dummy database. Then the voter can cast his/her vote to the his/her choice candidate. Now the final module is Result which had admin login for security purpose then we has linked all result pages such as Result from whole constituency , Result from particular constituency and then the result will be display.

III. Implementation

As Shown in figure all the user and systems work according to it . The mathematical representation shows the functional property of all the users and a way to solve the problem.



S={s, U, I, O, Fme, e}

Where,

S=System Space,

s=Start of system space,

U=Set of users
$\sum^{n}_{i=1} = U_i = \{u_1, u_2, u_3, \ldots\ldots, u_n\}$

I=Set of Input
$\sum^{n}_{i=1} = I_i = \{I_1, I_2, I_3, \ldots\ldots, I_n\}$

O=Set of Output
$\sum^{n}_{i=1} = O_i = \{o_1, o_2, o_3, \ldots\ldots, o_n\}$

Fme= Set of function
i.e.,
Fme = {sel(),ret()}
Where,

sel () = {Selection of the data from the database such as,
$P_1=$ б$_{dob,pin}$ from user_DB where DOB > “18”;
$P_2=$ б$_{bio\_img}$ from user_DB where IP=saved_image;}

ret () = {retrievation of the data from database such as,
$P_3=\pi_{(name, address, dob)}$ from user_DB;

$P_4=\pi_{(can\_name,voting\_option)}$ from Candidate_DB ;// after confirmation of user details ;}
e = end of system space.

IV. Conclusion

The system is design based on latest technology is smart voting system using fingerprint recognition. Smart voting system is useful for voter because voter can cast vote from any city to their constituency. Smart voting system may become rapid, boosted and efficient way to administration election. It also simplifies counting of votesand requires minimum number of officers. Result are quickly transferred to centralized database.

References

[1] Mohammed Khasawneh, Mohammad Malkawi, Omar Al-Jarrah2, Laith Barakat2, Thaier S. Hayajneh3, and Munzer S. Ebaid4, “A Biometric-Secure e-Voting System for Election Processes”, the 5th International Symposium on

[2] Sanjay Kumar, Manpreet Singh, “DESIGN A SECURE ELECTRONIC VOTING SYSTEM USING FINGERPRINT TECHNIQUE”, IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 4, No 1, July 2013.

[3] Barbara Ondrisek, “E-Voting system security optimization”, 42nd Hawaii International Conference on System Sciences – 2009.

[4] Lazaros Kyrillidis, Sheila Cobourne, Keith Mayes, Song Dongand Konstantinos Markantonakis, “Distributed e-Voting using the Smart Card Web Server”, 7th International Conference on Risks and Security of Internet and Systems (CRiSIS),2012.

[5] Haijun Pan, Edwin Hou, Nirwan Ansari, “E-NOTE: An E-voting System That Ensures Voter Confidentiality and Voting Accuracy”, Communication and Information Systems Security Symposium, IEEE ICC 2012.

[6] Foster D, Stapleton L, Huirong Fu ,“Secure Remote Electronic Voting”, Proceeding, IEEE International Conference on Electro/information Technology, 710 May 2006, pp: 591- 596.