

E-Voting with Real Time Biometric Verification System Implemented in Java Web Application



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ABSTRACT

This paper describes electoral system which is completely automated, unbiased and online for easing the process of voting, increasing security and reducing the counting time. The project is divided mainly into two sections: first one is voter registration phase of voter and second one is of actual voting phase on voting console. In voter registration phase the database of voter will be saved in repository which specifically contains voter's unique identification number and finger prints information. Project contains biometric device which will verify the identity from the database saved in repository by the communication and if respective voter is identified then authorization will approve to that respective voter at the same time in other section of repository it updates the database of authorized voter to register voter is qualify to vote and to uniqueness, also it will prevent the duplication and falsification of voter. The main focus of the proposed system is to voter has not possible to come for voting then our system is support online centralised service for vote that particular period.

Keywords: Electronic Voting Machine (EVM), Biometric, Voting System, Voting analysis.

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I. INTRODUCTION

Voting is very effective way to reveal opinion about a issue or subject from a group of people. Based on the promise of greater efficiency, better scalability, faster speed, lower cost, and more convenience, voting is currently shifting from manual paper-based processing to automate electronic-based processing [1]. The term "electronic voting" characteristically depicts to the use of some electronic means in voting and ensures the security, reliability, guarantee and transparency. Now a day the wide range of application of voting include its use in reality student body elections, shareholder meetings, and

the passing of legislation in parliament [2]. It may be the most important, influential and widespread use of voting is its use in national elections and speaking of national elections there are 204 countries in the world about them 120+ nations follows democratic or hybrid democratic method so electoral system is the heart of these nation . In India we used the electronic voting machine or EVM which is developed by election commission of India and Bharat Electronics limited i.e. BEL in 1977. It consists of mainly two units they are controlling unit and ballot unit, ballot unit is used for the actual voting.

As the modern communications and Internet, today are almost accessible electronically, the

computer technology users, brings the increasing need for electronic services and their security. Usages of new technology in the voting process improve the elections in natural. This new technology refers to electronic voting systems where the election data is recorded, stored and processed primarily as digital information. In the past, usually, information security was used mostly in military and government institutions. But, now need for this type of security is growing in everyday usage. In computing, eservices and information security it is necessary to ensure that data, communications or documents (electronic or physical) are enough secure and privacy enabled. Advances in cryptographic techniques allow pretty good privacy on voting systems.

II. LITERATURE SURVEY

Subba Rao et al., [1] in 2011 proposed a Steganography technique that is based on randomizing the sequence of cipher bits. Advantage of this technique is there is no one-to-one mapping between a given cipher text and an image.

Constantinos Patsakis and Evangelos Fountas [2] in 2010 proposed Fibonacci LSB Data Hiding Technique to more integer bases. In this work, a new embedding method, which generalizes the idea of Fibonacci decomposition, enabling more data to be embedded in an image with good statistical properties was presented.

Namita Tiwari and Dr.Madhu Shandilya [3] in 2010 evaluated the LSB based Methods of Image Steganography on GIF File Format. This paper focused on hiding the message in the least significant bits of the colors of the pixels of a GIF image.

Hanan Mahmoud Hanan et al., [4] in 2010 proposed a Novel Technique for Steganography in Fingerprints Images. This paper describes the design and implementations of a project concerning the hiding of messages in images specifically fingerprint images. The policy of this project is to keep the confidential messages hidden inside the drawing of the fingerprints.

Sanjay Saini and Dr. Joydip Dhar [5] in 2008 proposed an eavesdropping proof secure online

voting model. In this paper an online voting framework was formulated which ensures that the voter is able to vote in a public environment without his vote being eavesdropped on by a neighbor.

E.S. Shameem Sulthana and Dr.S.Kanmani [6] in 2011 presented the Evidence based Access Control over Web Services scheme using Multi Security. This paper explains about voting through internet, with facial detection integrated with finger print authentication and automated load balancing, fused with data hiding security.

Alok Kumar Vishwakarma and Atul Kumar [7] in 2011 proposed a Novel Approach for Secure Mobile-Voting using Biometrics in Conjunction with Elliptic Curve Crypto-Stegano Scheme. This paper describes a secure mobile-voting system using cryptography and Steganography.

Nabin Ghoshal and J. K. Mandal [8] in 2011 proposed a Steganographic Scheme for Colour Image Authentication. This paper deals with a novel steganographic technique which demonstrates the colour image authentication technique in frequency domain based on the Discrete Fourier Transform (DFT). Experimental results confirmed that this algorithm performs better than discrete cosine transformation (DCT), Quaternion Fourier Transformation (QFT) and Spatio Chromatic DFT (SCDFT) based schemes.

Masoud Afrakhteh and Subariah Ibrahim [9] in 2010 presented an Enhanced Least Significant Bit Scheme robust against Chi-Squared attack. Among the steganographic techniques and particularly in conventional least significant bit (LSB) insertion method, there is a challenging issue and that is how to embed desired secret bits in a cover medium in a way not to be seen by human vision. This paper proposes a method that utilizes more surrounding pixels unlike BPCS, PVD and MBNS methods which use 3 or 4 immediate neighbors of each pixel and finally, it is finally, it is proved that the method is robust against Chi-squared attack.

Guo-Shiang Lin et al., [10] in 2010 proposed a framework for Enhancing Image Steganography with Picture Quality Optimization and Anti-Steganalysis based on Simulated Annealing

Algorithm. In this paper, a closed-loop computing framework was proposed which iteratively searches proper modifications of pixels/coefficients to enhance a base steganographic scheme with optimized picture quality and higher anti-steganalysis capability.

III. PROPOSED SYSTEM

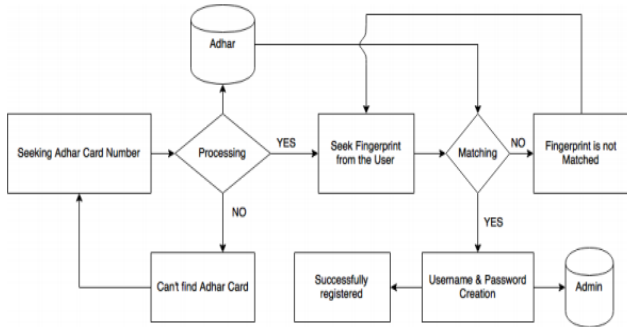


Fig 1. Registration process of a new Admin

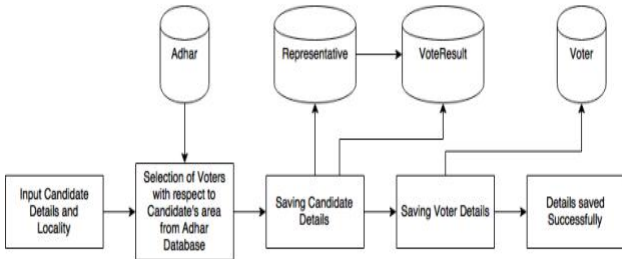


Fig 2. Flow Chart of Configuration

Explain:

- ▶ User vote at their current location through Authorized Voting Booths.
- ▶ After voting Voters get confirmation through Email.
- ▶ Votes by voters are stored in secure databases maintained by Election Commission.

Module:

Voter Registration:

- ▶ Voter basic information will be added in this module.
- ▶ Linking of VoterID and Adhar Card.
- ▶ While linking it should ask for fingerprint of voter.

Voter Voting:

- ▶ Voting from remote place.
- ▶ When voter provide login with his VoterID, it should automatically display the voting page of respected area.

- ▶ After submitting vote users session is expired and vote is stored into database of election commission.
- ▶ User will get confirmation through Email.

Local Authorized Person:

- ▶ Main objective is to avoid and prevent Duplicate or Fake voting.
- ▶ Local Authorized Person is provided with Database of Voters.
- ▶ When voter arrived at local voting booth, LPA give entry into Database.
- ▶ This Database is shared with Distance Authorized Person in real-time.

Distance Authorized Person:

- ▶ Distance Authorized Person is also provided with Database of Voters.
- ▶ DAP is responsible for Distance Voting by Remote Voters.
- ▶ When voter arrived at distance voting booth, DPA give entry into Database.
- ▶ This Database is shared with Local Authorized Person in real-time.

Admin:

- ▶ Admin authority is given to Election Commission Officers.
- ▶ Admin can add or delete LPA and DPA.
- ▶ Provide Database for LPA and DPA.
- ▶ Ensure Voting at specific locations.

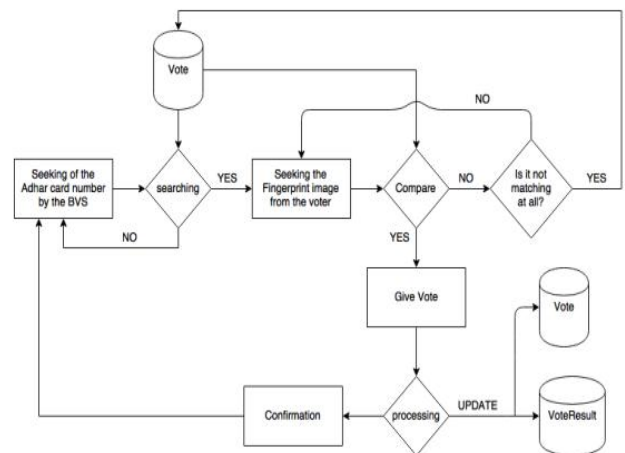


Fig 3. Flow Chart for User Mode

IV. CONCLUSION

Throughout this paper a maiden overview of a Biometric Voting System is presented which can be implemented in the elections of India to

prevent the antisocial activities in the booth. This system can be implemented in other countries also where the government of that country issues card like Adhar card for the citizen. It is too much fast to do the tasks and most of the tasks are done automatically by the system so that, there will be no problem of manual discrepancies. The cost of the system will not be so high. Biometric devices are highly used in most of the organizations now-a-days. So it is not too much strenuous task for any organizations like Election Commission of India to bear the expense of this system. The system is too much accurate about the Vote Result and it is fast too for doing the tasks. Elections results can be declared very soon by utilizing this system and we will get an actual transparent election.

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