A Survey on:Aadhar based Dual Authentication Secured E-Voting System

Prajakta Jadhav[1], Vidya Bhapkar[2]

[1,2]Dept. of Computer Engineering, Someshwar Engineering College, Someshwarnagar, Maharashtra 412306 India.

Abstract - *all voting systems include the some following steps: voter identification, authentication, voting and recording of votes.Every citizen of democratic country has right for voting. Generally cast, vote counting and publication of election results. Voter identification is required during election process. Security is a main aspect of e-voting process. A secured electronic voting machine using unique identification i.e. AADHAR number has been developed. To provide better security along with the AADHAR number biometric identification is also used. During the elections, the voter authentication can be done through biometrically. If the voter biometric information matches the database of the AADHAR only then the person is allowed to cast their vote. Additional advantage of the system is to avoid fake voting.*

Key words-Cloud Computing, Database Management System, Aadhar Card, fingerprint scanner, Arduino

1. INTRODUCTION

It is the famous quote "Democracy is for the people, by the people, of the people". Election play important part in choosing the capable leader which in-turn can impact the entire nation [2].The current system is less secured because there could be chances of fraud at the voting time. Authentication of Voters, Security and Protecting voted data these are the main challenges of current voting system[8].By considering this problem our proposed system has extra feature is the biometric security and aadhar database that's why system should be easy to authenticate and verify [5].

In this paper, we have proposed an election voting system which is based on the fingerprint of voter which is saved with Aadhar card number[12].Fingerprint biometric provide secure authentication because fingerprint is unique to each individual person. Both fingerprint identification and Aadhar number verification of the personnel are compared and verified with the data stored.

We are also validating users based on whether he is eighteen plus or not by checking his age or status of voting [4]. This system shows how the problem of existing voting system can be solved with the help of fingerprint scanner and UIDAI number which will be convenient for every citizen to use at the polling both[10].

2. APPROACHES

A. Previous approach

Traditional Voting System: In traditional voting system voter can cast vote by ballot paper. After enter in polling station the officer check election Id card of voter and allocate ballot paper to voter .Voter can marking name and symbol of candidate by rubber stamp on ballot paper. After this voter folds ballot paper and insert into ballot box.

Electronic Voting Machine: EVM machine uses control unit and balloting unit and this two units are joined each other through cable .The control unit is with polling officer and balloting unit is inside the voting compartment .instead of providing ballot paper polling officer press the ballot button an allow voter to cast his vote to candidate and symbol of his choice.

B. Disadvantage of Previous Approach

- Illegal Voting:-One candidate cast the votes of all members or few amount of members in the list illegally.
- Most of the people do not vote because they away from their home constituencie on the Election Day.
- It is very difficult to collect the ballot boxes and transport to main centres.
- Need more time for counting.

C. Proposed Approach

In proposed system we are uses aadhar database is main sheet anchor of our system for authentication and checking the eligibility of the voter [1].

System is aadhar based electronic voting system with biometric fingerprint. It determine the particular voter by his/her UIDAI number and fingerprint to identify whether person is valid voter or not [3]. Aadhar card is used to retrieves complete information about voter. The system is online system and database is saved at central database. Central database contain demographic and biometric data of every citizen of India. In propose system when we are going for voting first we enter Aadhar number system accept Aadhar number and ask for finger print for verification of correct voter[7].After that it will matches UIDAI number and fingerprint and display conformation or error message. Once the voter will casted his/her vote to candidate his Aadhar number is save and new voter will come for voting his UIDAI number will compared with save UIDAI number [8]. If the Aadhar number is same then voter cannot vote, if Aadhar number is not same then voter cast his vote. Every time it will check the status of vote i.e. Birth date, voting status[2].If voting process is done successfully then it send message to the voter.

3. SYSTEM ARCHITECTURE

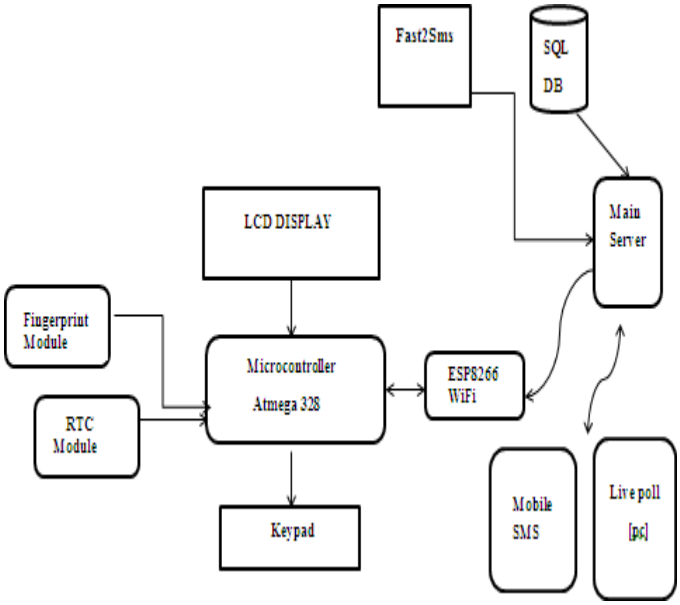

Fig: Proposed System Architecture

4. LITERATURE SURVEY

1] Aadhar Based Election Voting System.

Authors:- Ankita R. Kasliwal, Jaya S. Gadekar, Manjiri A. Lavadkar, Pallavi K. Thorat, Dr. Prapti Deshmukh.

Description: The system provides best solutions to problems related to the Indian voting system. In voting process authentication can be done using fingerprint recognition to cast voter's votes, it ensures that vote casting cannot be changed by an unauthorized person. It require Touch screen computer, Fingerprint scanner, and electricity. Aadhar's confidential data may be hacked by the hacker.

2] Secured Electronic Voting Machine using Biometric. Authors:- Anandaraj S, Anish R, Devakumar P.V. Description: Implements a simple and secured method of polling vote by using Aadhar card number. In this system, the user has to use his finger-print to poll the authenticated vote.

3] A Fingerprint matching technique using minutiae Based Algorithm for Voting System.

Authors:- T.Divan and V. Gulhane.

Description: In this paper, minutiae based algorithm is discussed briefly showing how a new identity is created, also

architecture is explained. Minutiae based algorithm use two stage fingerprint matching technique, in which minutiae position from one fingerprint image orientation from other is used to create combined fingerprint image. The system aims to implements a voting system using minutiae based algorithm with low FRR rate.

4] Secured and Transparent Voting System Using Biometrics.

Authors:- Ch.Jaya Lakshmi, S.Kalpana.

Description: The systems have additional security by allowing voter to vote only once by imparting unique identification with biometric information. Systems avoid fraud voting and illegal practices during the election is the main issue in traditional voting system. Database details can be updated every time age, biometric of the people updated before election every time. Information about casted vote can be sent to the voter through the messaging system.

5] Aadhar Based Electronic Voting Machine using Arduino. Authors:- Murali R Prasad, Polaiah Bojja and Madhu Nakirekant.

Description: The voting system managed in a easier way as all the users should login by Aadhar card number and password and click on favorable candidates to cast the vote. The extra feature of the model is that the voter will ensure that vote has gone to correct candidate or party.

5. METHODOLOGY

1. User Enrollment

Firstly, voter saves their fingerprint in enrollment Processing and also gives their Aadhar detail.

2. User Authentication

We checks valid user from actual database.

3. Age and Double Vote Checking

We check the users age and voting status before user Gives the vote.

4. Voting Status Acknowledgement

Send the SMS after given an vote sms consist of to Whom candidate your vote.

6. CONCLUSION AND FUTUREWORK

In this paper, we have proposed the Aadhar based Dual authentication Secured E-voting system which is better and Secure than previous system. The proposed system will overcomes all the drawbacks of the ordinary E-voting machine and also provides additional security such that Aadhar Database and Fingerprint. This system cheks the status of each voter like voter's age is 18 or not by using Aadhar database to identify invalid or fake voters. For further verification this system uses a fingerprint of the voter, which is unique each and every person. This proposed system provides extra feature that is Fast2Sms.It avoids and reduce the chances of fraud and rigging.

REFERENCES

[1] H.Agarwal, and G.N.Pandey, Online Voting System For India Based On Aadhar Id,2013 Eleventh International Conference on ICT and Knowledge Engineering, Bangkok, 2013.

[2] Ch.Jaya Lakshmi, S.Kalpana Secured and Transparent Voting System Using Biometrics Proceedings of the Second International Conference on Inventive Systems and Control (ICISC 2018).

[3] G.Valarmathy, V.Saranya, Riya Rose Cherian, K.Poovizhi, Smart Voting System Using Aadhar, published in IJRE, Volume: 04 Issue: 01 2017.

[4] Rohan Patel, Vaibhav Ghorpade, Vinay Jain and Mansi Kambli, Fingerprint Based e-Voting System Using Aadhar Database, published in IJREST Volume2, Issue-3, March 2015.

[5] Rahil Rezwan, Huzaifa Ahmed, M. R. N. Biplob, S. M. Shuvo, Md. Abdur Rahman Biometrically Secured Electronic Voting Machine, 2017 IEEE Region 10 Humanitarian Technology Conference (R10-HTC) 21 - 23 Dec 2017, Dhaka, Bangladesh.

[6]T.Divan and V. Gulhane, A Fingerprint Matching Technique Using Minutiae Based Algorithm For Voting System: A Survey, 2015 IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT), Coimbatore, 2015.

[7] Murali R Prasad, Polaiah Bojja and Madhu Nakirekanti, Aadhar Based Electronic Voting Machine Using Arduino, International Journal of Computer Applications 145(12):3942, July 2016.

[8] PB.Mary Havilah Haque, G.M.Owais Ahmed, D.Sukruthi, K.Venu Gopal Achary, C.Mahendra Naidu, Fingerprint and RFID Based Electronic Voting System Linked With Aadhar For Rigging Free Elections, Published in IJAREEIE Vol.5, Issue 3, March 2016.

[9] Soumyajit Chakraborty, Siddhartha Mukherjee, Bhaswati Sadhukhan, Kazi Tanvi Yasmin,Biometric Voting System Using Adhar Card in India, Published in IJIRCCE Vol. 4, Issue 4, April 2016.

[10] D. A. Kumar and T. U. S. Begum, Electronic Voting Machine A Review, International Conference on Pattern Recognition, Informatics and Medical Engineering. [11]Anandaraj S, Anish R, Devakumar P.V, Secured Electronic Voting Machine Using Biometric, ICIIECS 2015. [12]Gowri, Guruprasanth, Jaya Surya. D, Krishnan. S, Dhanasekaran S. Implementation of Biometric Voting Machine Using Aadhar Card, IJSRSET , Volume 2,Issue 2 2016.

[13]Ankita R. Kasliwal, Jaya S. Gadekar, Manjiri A. Lavadkar, Pallavi K. Thorat, Dr. Prapti Deshmukh. Aadhar Based Election Voting System IOSR Journal of Computer Engineering (IOSR-JCE).