

Online Voting System Using Aadhaar Card and Biometric

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Abstract - The problem of voting is still critical in terms of safety and security. This paper deals with the design and development of a web-based voting system using cloud computing and aadhaar card in order to provide a high performance with high security to the voting system. We also use web technology to make the voting system practical. The proposed Online Voting System allows the voters to authenticate using aadhaar no which is then matched with an already saved within a database that is retrieved from aadhaar card database of the government. The voting system is managed in a simpler way as all the users must login by aadhaar card number and password and click on his/her favorable candidates to cast the vote. This will increase the voting percentage in India and reduces the cost of voting process. By using aadhaar card identification it provides enough security which reduces the false votes.

1. INTRODUCTION

The proposed system is the online voting system with authentication using aadhaar card. It determines the particular voter by his/her aadhaar no whether he/she is a valid voter or not. It allows particular voter to cast the vote online and update the database in the server. Biometric online voting system uses aadhaar card to retrieve the details about the voter. The data is collected by the Unique Identification Authority of India,

Aadhaar is the world's largest biometric ID system, representing an identity of Indian people. Aadhaar is a proof of residence and not a proof of citizenship, and it does not itself grant any rights to domicile in India. Prior to the achievement of the Act, UIDAI functioned as an attached office of Planning Commission (now NITI Aayog) since 28 January 2009. On 3 March 2016, a money bill was introduced in the assembly to give legislative backing to Aadhaar.

The court also limited the scope of the program and reinstated the voluntary nature in other rulings. On 24 August 2017, the Indian Supreme Court delivered a landmark verdict on Right to Privacy as a fundamental right, overruling previous judgments on the issue. As of November 2017, a five-judge constitutional bench of the Supreme Court is yet to hear various cases relating to the validity of Aadhaar on various grounds including privacy, surveillance and exclusion from welfare benefits. On 9th January 2017, the five-judge Constitution bench of the Supreme Court of India reserved its judgement on the interim relief sought by petitions to extend the deadline making Aadhaar mandatory

for everything from bank accounts to mobile services. The court said that the final hearing for the extension Aadhaar Linking Deadlines will start from 17 January 2018. Some civil liberty groups, like Citizens Forum for Civil Liberties and Indian Social Action Forum (INSAF), have also opposed the project over privacy concerns.

2. RELATED WORK

Many e-voting protocols have been proposed from both theoretical and practical perspectives in the literature. However, to the best of our knowledge, no complete solution has been found because of the importance of security requirements in voting systems such as privacy, accuracy, fairness and robustness. E-voting protocols have an anonymity requirement, which means the unlinkability between the voter and his cast vote. Anonymity is the primary requirement of the e-voting protocols in order to satisfy voter privacy.

Fraud and system violations can be done without being detected in anonymous environments. This properties of e-voting forces the researchers to find a way to satisfy the voter that his vote is really counted and the voting is done properly. This requirement is named as verifiability and used many years in the literature. In software engineering, substantiation is the process of verifying that the system complies with design specifications and formally specified properties, such as consistency and redundancy; and validation is the process of validating that the system satisfies the intended use and fulfills the user requirements (IEEE 1996). In other words, verification is building the system right and validation is building the right system. In an ideal world, a verified system would be naturally validated, but this is far from what is currently possible in practice. Even if it is possible to specify formally all of the user requirements, and then to verify that a system conforms to this specification, there would still be no guarantee that the requirements were correct. Substantiation can be viewed as a part of validation, it is unlikely that a system that is not built right to be the right system. However, attestation is unlikely to be the whole of validation, due to the difficulty of specifying user requirements. Therefore, it seems that validation should be more than verification.

Himanshu Agarwal, G.N. Pandey proposed an On-line Voting System for India Based on AADHAAR ID Dec 2013 In this model a person can also vote from outside of his/her allotted constituency or from his/her preferred location. Ankit Anand, Pallavi Divya proposed An Efficient Online Voting System

July-Aug 2012.R1,Gnanavel.G2,Jagadhambal.K3 Proposed Bio-metrics Using Electronic Voting System With Embedded Security March 2013. Voting schemes have advanced from counting hands in early days to systems that include paper, punch card, mechanical lever and optical-scan machines.

Hazzaa1,Seifedine Kadry2,Oussama Kassem Zeinproposed Web-Based Voting System Using Fingerprint: Design And Implementation Dec 2012. The problem of voting is still critical in terms of safety and security.

3. PROBLEM STATEMENT

To design a system

- 1.Allows the voters to login with aadhaar no, which is then matched with an already saved within a database that is retrieved from aadhaar card database of the government.
- 2.The voting system is managed in a simpler way as all the users must login by aadhaar card number and One Time password and click on his/her favorable candidates to cast the vote.
3. Increase the voting percentage in India and reduces the cost of voting process. By using unique identification no it provides enough security which reduces the false votes.

4. GOALS and OBJECTIVES

Goals:

- _ Identify intended voter using aadhaar card number.
- _ System is used for avoid fake voting.
- _ System provide high security for voting system.
- _ use secured database using UID.

Objectives:

- _ This is a voting system by which any voter can use his/her voting rights from anywhere in the country.
- _ Voter can cast their votes from anyplace in the country , in highly secured way.
- _ To makes voting a fearless of violence and that increases the percentage of voting.
- _ various drawbacks such as time consuming, consumes large volume of paper work, no direct role for the higher officials, damage of machines due to lack of attention, mass update doesn't allows users to update and edit many item simultaneously etc.

5. SYSTEM ARCHITECTURE

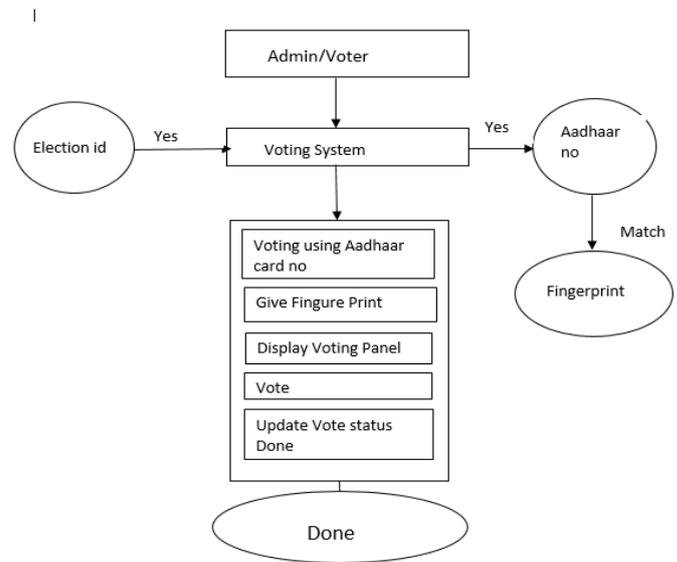


Fig -1: System Architecture

A description of the program architecture is presented. The proposed system is the Biometric online voting system using aadhaar card. It determines the particular voter by his/her UPI no whether he/she is a valid voter or not. It allows particular voter to cast the vote on-line and update the database in the server.

This system proposes a secure online e-voting system that uses UIDAI or aadhaar database as its backend. The system ensures authentication of an individual by matching aadhaar no and eligibility is checked by calculating the age of the voter thus making the existing voting cards redundant. The proposed system can handle voting at different levels such as Parliamentary, Municipality, State legislative assembly, etc simultaneously. The project will bring transparency in the voting process by assuring the voters that their votes will be in favor of the candidates of their choice. Besides electronic recording and counting of votes will be faster, more accurate and less labor intensive. The design of this system will make voting process more convenient and may therefore lead to improve the turnout.

6. MATHEMATICAL MODEL

$$S=U, I, O, P$$

Where,

U = Set of users

$$U_i = \{u_1, u_2, u_3, \dots, u_n\}$$

Where $n > 0$

= ex. Primary user.

I = Set of Inputs

$$I_i = \{i_1, i_2, i_3, \dots, i_n\}$$

Where $n > 0$

= ex. Election ID and aadhaar ID

Output= {vote done successfully}

P = Set of Processes

Pi = {p1,p2,p3,... ..,pn}

Where n>0

7. SYSTEM OVERVIEW

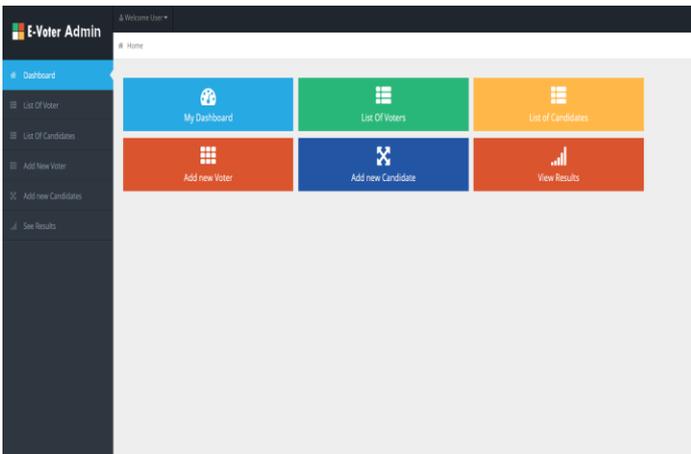


Fig -2: System Overview

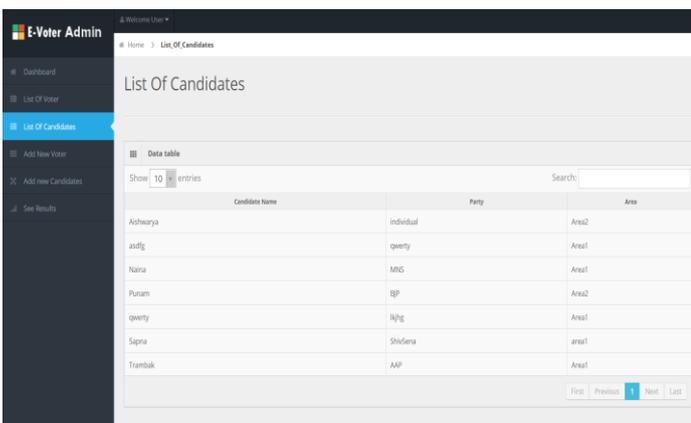


Fig -3: System Overview

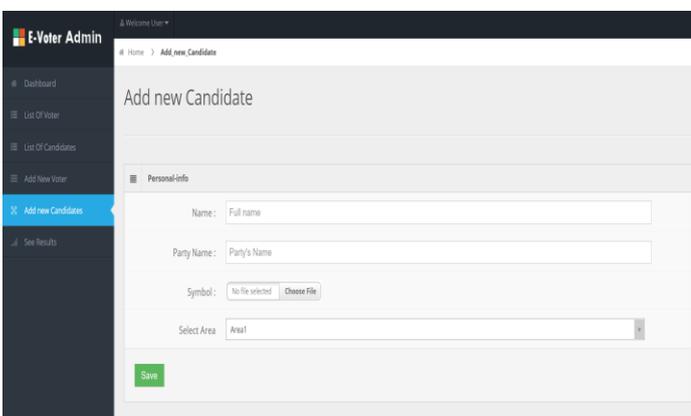


Fig -4: System Overview

8. CONCLUSION

By using the aadhaar card we implemented the system which increases the voter’s privacy. The system also managed in simpler way as well as secure to voting system. The aadhaar will provide the unique identification to each voter so the breach of privacy is get avoided. Aadhaar numbers will eventually serve as the basis for a database with which disadvantaged Indian residents can access services that have been denied to them due to lack of identification documents. In future scope, we want to implement the system for election system in India.

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