

# A Novel Approach to Develop a Compatible smart voting Machine with High Security

Harsha GR<sup>\*1</sup>, Ganesh U<sup>2</sup>, Chethan Krishna K<sup>3</sup>, Ashoka S<sup>4</sup>

<sup>1</sup>Department of CSE, KSSEM, Bangalore, Karnataka, India

<sup>2</sup>Department of CSE, KSSEM, Bangalore, Karnataka, India

<sup>3</sup>Department of CSE, KSSEM, Bangalore, Karnataka, India

<sup>4</sup>Assistant Professor, Department of CSE, KSSEM, Bangalore, Karnataka, India

## ABSTRACT

In a democracy, a government is chosen by voting in an election. The election commission of "INDIA" is being following the manual voting system, which is done by electronic voting machine. The conventional voting mechanisms are widely being misused in such a way that people whatever and whomever they vote, will be converted into some other's party or candidates or people's right to vote are denied. These kind of illegal activities happening in both rural and urban areas results in less percentage of voting as the people are lacking interest to cast their votes for the candidates who represent their respective areas. To ensure 100% voting smart voting system is being introduced. As security and technology is a major drawback in developing countries like India smart voting system is not approved like any other developed countries. Our theme is to develop a compatible voting machine with security as main concern. This system is mainly designed for our country which has three phases, these phases involves extracting the details of the citizens above 18 years from aadhar card database since it is mandatory in present scenario. With the help of extracted information, a new voter ID is generated and intimation to the citizens will be given to their respective E-mail and phone numbers. At the time of voting, along with the ID and password provided in the intimation to the users, the finger prints of the voter is used as the main authentication concerning security, as the finger print pattern of each person is unique. The finger print system authenticates users to cast their votes. To avoid multiple votings, the voter ID and other details will be erased as soon as they cast their votes and the aadhar card details will be tracked and locked to access to preserve security.

**Keywords:** Vote, Aadhar card, Fingerprints, Voter ID, Matlab

## I. INTRODUCTION

In a democratic country like India a eligible government is chosen by fundamental right of voting and the leaders are elected on a basis of majority of votes by the citizens of India. India is one of the world's largest democracies with a population of over 1.1 billion. In the recent Indian General Election of

2014 it has recorded that 814 million people were eligible to vote also over 828 thousands polling stations, 1.37 million voting machines and 5.5 million polling officials cover 543 parliamentary constituencies.

The past experience of voting system and their drawbacks lead to the use of latest technology in E-

voting process. The current voting mechanism has many security problems, and it is very difficult to identify the faults. A voting system that can be demonstrated correct has many considerations. Some of the major concerns for a government regarding electronic voting systems are to expand election activities and to minimize the election expenses. Still there is some opportunity of work in electronic voting system in terms of secured voting and to protect the electronic voting machine from fraud activities.

During Electoral procedures candidates are required to file their nomination papers with the Electoral Commission of India days before the voting period starts. Then, a list of candidates is published. No party is allowed to use government resources for campaigning. No party is allowed to perform illegal activities to bribe the candidates before elections. The government halts all the functions and works during the period of voting. Campaigning ends at 6:00 pm on the second last day before the polling day. The polling is held between 7:00 am and 6:00 pm. The Collector of each district is in charge of polling. Government employees are employed as poll officers at the polling stations. Electronic Voting Machines (EVMs) are being used instead of ballot boxes to prevent election fraud. After a citizen votes, his or her left index finger is marked with an indelible ink. This practice was instituted in 1962.

Federalism is the basis of Indian government. During the election process, once the votes have been casted, elected officials are appointed at federal, state and local levels. Results of elections are determined by first-past-the-post system. The Election Commission of India conducts elections. Members of the Lok Sabha, the lower house of parliament elect the Prime Minister of India. The number of votes and seats won provides a ranking of political parties

## II. OBJECTIVES

The Electronic Voting Machines (EVMs) are being used to cast the votes and due to the drawbacks of the existing system our proposed system aims at providing highly secured and compatible smart voting system to the citizens in order to ensure safe and proper voting

The objectives of our secured voting system are:

1. To design and develop an efficient finger print recognition system.
2. To fetch the details of citizens using Aadhar card.
3. To generate new voter ID by authenticating with the Aadhar card information.
4. To ensure proper working of our voting system both online and poll booth centre.

## III. SYSTEM DESIGN

The Voting system in a democratic Nation aims for providing a best Government in order to help the development of country. The constitution of India gives power to the citizens for selecting the government by electing the eligible candidates of their interest in order to protect their fundamental rights. The existing voting procedure has some of disadvantages due to which we are facing less percentage of votes and also security problems, in order to overcome the same problems the proposed system is designed to provide highly secured and efficient voting procedure utilizing Aadhaar credentials and finger prints which are unique for every individuals.

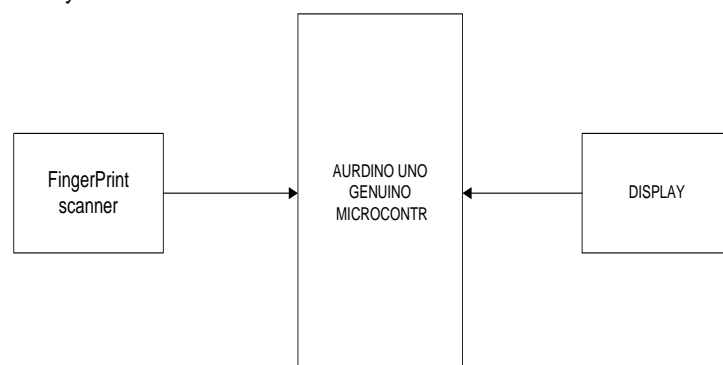
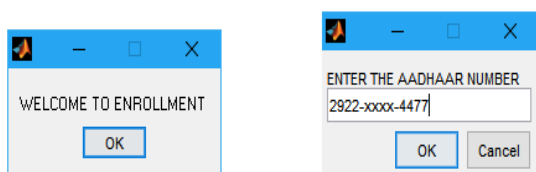


Figure 3.1 Architecture of voting system.

The Architecture of voting system depicts that there are three components Fingerprint scanner , Aurdino Genuino UNO Microcontroller and Display. The Fingerprint scanner is used for scanning the fingerprint patterns and recognizing the person's fingerprint pattern thus it helps for Authorization. Aurdino Genuino UNO Microcontroller is used for powering the fingerprint scanner and also used to load the code for performing the system functionalities. Display is used to show the output of the whole system and provides the interface to the user.

#### IV. RESULTS



**Figure 4.1** Enrollment using Aadhar credentials  
Figure 4.1 says that Enrollment session has started and voter registers for the voting session.



**Figure 4.2** Voting Session  
Figure 4.2 says that the voting session has started and voter can choose the desired party.

	A BJP	B CONGRESS	C JDS	D OTHERS
	Number	Number	Number	Number
1	1	0	1	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0

**Figure 4.3** Results page, where votes are stored.

Figure 4.3 shows that votes are being stored and gets incremented as new votes are casted.

#### V. CONCLUSION

Eligible citizens who are 18 and above are given a "right to vote" for their desired candidate. During the process of voting due to various reasons people who stand for elections, practice various illegal activities to get their votes. Moreover, due to some reasons each year number of people who cast votes are decreasing gradually, lot of people are losing their trust in their own leaders. In such scenarios, the development of a secured and smart voting system would provide a base to solve all the above problems. A secured voting system prevents various illegal activities by providing finger print authentication and Aadhaar credentials where only one person can cast one vote. In addition, a smart voting system prevents people from changing the votes and makes it easier for every citizen to cast their votes to their desired candidate. This article makes use of Aadhaar details and fingerprints associated with it to provide secured voting.

#### VI. REFERENCES

- [1] Bhuvanapriya.R, Rozil Banu.S , Sivapriya .p , Kalaiselvi.V.K.G , Smart Voting, IEEE, Second International Conference On computing and Communication Technologies (ICCCT'17) , 5 , 2017.
- [2] Soumyajit Chakraborty , Siddhartha Mukherjee,Bhaswati Sadhukhan,kazi Tanvi Yasmin , Biometric Voting System using Aadhar card in India , International Journal of Innovative Research in Computer and Communication Engineering , IEEE , 4 , 8, 2016.
- [3] Maryam Pouryazdan , Burak Kantarci , Houbing Song , Anchor - Assisted and Vote-Based Trustworthiness Assurance in Smart City Crowdsensing U.S.National Science Foundation , IEEE , 4 , 13 , 2016.

- [4] Syed Mahmud Hasan, Md. Tahmid Rashid, Md. Shadman Sakib Chowdhury , Dr. Md. Khalilur Rhaman , Development of a Credible and Integrated Electronic Voting Machine Based on Contactless IC Cards, Biometric Fingerprint Credentials and POS Printer , IEEE Canadian Conference on Electrical and Computer Engineering (CCECE),5 , 2016.
- [5] Rahul V Awathankar , Dr. Rajeshree D. Rau, Dr. M S S Rukmini,Ad-Hoc Network Based Smart I-Voting System: An Application to Cognitive Radio Technology, IEEE International Conference on Computational Intelligence and Computing Research, IEEE, 6, 2016.
- [6] M.O Yinyeh and K.A. Gbolagade, Overview of Biometric Electronic Voting System in Ghana, International Journal of Advanced Research in Computer Science and Software Engineering, Volume 3, page 624-627.
- [7] Talib Divan, Veena Gulhane , A Fingerprint Matching Technique using Minutiae based Algorithm for Voting System: A Survey, Electrical, Computer and Communication Technologies (ICECCT), 2015 IEEE International Conference on, 5,2015.
- [8] Ayman Mohammad Bahaa-Eldin, A medium resolution fingerprint matching system,Ain Shams Engineering Journal ,IEEE,16,2013.
- [9] Daniel Peter , Dan Alexandru Stoichescu , A Hybrid Mobile Biometric Based E- voting System,9th International Symposium on Advance topic in Electrical Engineering , IEEE, 37-42, 2015.
- [10] Devendra Vijay Naik,Smart Wireless Authenticating Voting Machine,ICCSP ,IEEE,0785-0788,2015.