

# IoT Based E-Voting System to Avoid Fraud Voting

**Mayuri Gomte, Harshal Chaudhari, Abhishek Tapare, Dr. Y. M. Patil**

Department of Electronics and Telecommunication Engineering  
Sinhgad College of Engineering, Pune, Maharashtra, India

**Abstract:** *The voting system plays a major role during elections. Traditionally, the election commission in India uses electronic voting machines which need more man- power, time- consuming and also they are less trustworthy. For avoiding misconceptions during elections, there are lot of advanced techniques are being proposed using various methods. But in the field of biometric identification, we can get the better results and it is also trustworthy. we provide the various works which are being proposed based on the voting system which uses biometric identification as a major concept.*

**Keywords:** Arduino UNO, Secured voting, Biometric Identification, Electronic Voting

## I. INTRODUCTION

This is a completely automated online monitorize election process in which electoral vote counts are done in real time that by the end of choices day and the results are automatically out. The election process can be fluently enhanced with colorful features base on the demand and conditions of different countries around the world. Due to worldwide advancements in computer and telecommunication technologies online voting is no longer a North American or Western miracle. E-Voting may soon come a global reality or a global agony. Besides, there's a dire need for transnational norms to govern the technology, the software trust ability and delicacy, the processes and algorithms stationed within the technology, and the verification of all tackle, software and protocols involved. similar norms will ultimately allow choices to do in any part of the world without the need for covering bodies.

## II. PROBLEM STATEMENT

There are several problems and issues which are the most important downsides that have to be cleared and vindicated. There are some of the important problems like High man power, takes lots of time to give count, long distance communication isn't available, lower delicacy, lower security etc. According to the current system, votes could be counted manually so that there's further occasion for being crimes, similar as duplicates counting and fully missed counting. In being system they used paper voting where the large quantum of papers are needed for voting. After that in upgraded system they used electronic voting machine where large quantum of man power is needed and authentication is done by manually.

### Hardware Used

- Arduino UNO
- Fingerprint Module (R307)
- LCD Display (16\*2)
- Switch Array
- Power supply cable

### Software Used

- Arduino IDE
- Language used Embedded C
- Proteus

### Advantages

It gives chance to avoid invalid votes. It reduces the polling time. Reduce the staff of advancing center. It provides easy and accurate counting without any troubles. Low power consumption. Time conscious, as lower time needed for voting and counting. Accessible on the part of namer.



Applications

- Education
- Government Sector
- Industry
- Small Scale Sector

**II. LITERATURE SURVEY**

P. Tamilarasu et al. proposed smart electronic voting system based on Bio-Metric identification survey. We can get the better results and it is also trust worthy. It uses biometric identification as a major concept. Different algorithms being use and different techniques provided are based on the multimodal bio- metric identification. It gives the concept of getting the fingerprint impression of a voter which is entered as input to the system then comparing it with the available data in the database. If the particular pattern matches with anyone on the available record, access to cast a vote is granted. Then the result is instantaneous and counting is done via IOT. [1]

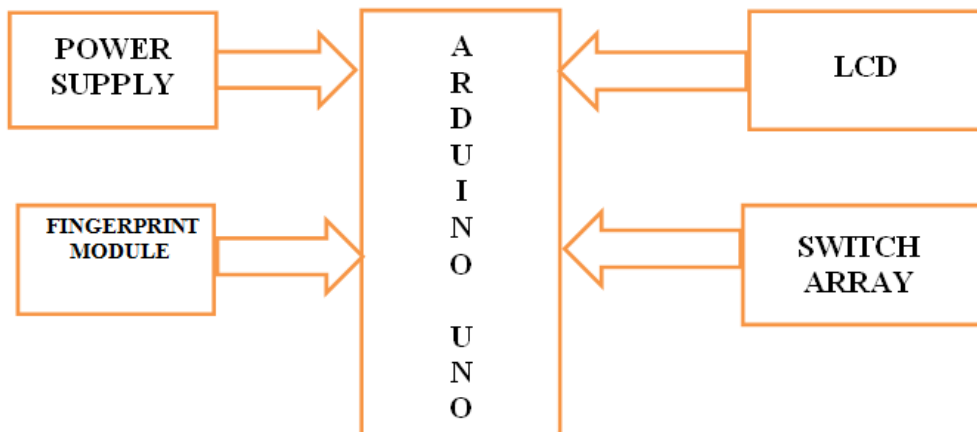
H. C. Lee et al. proposes and implements a simple and secured method of polling vote by using biometric. Due to the changes occurred in the technology, the improvisations aim at increasing the flexibility security, reliability, scalability of the model and provide less time consumption to announce the result. Nowadays, the voting procedure was held by manually operating machines and even through SMS also. But this electronic voting machine is a unique and new concept which saves a lot of time and avoids the false voting by a false person. In this system, the user has to use his fingerprint to poll the authenticated vote. [2]

Chihhsiong Shih et al. proposed a system, that use AADHAR CARD database. The term AADHAR CARD BASED VOTING SYSTEM represent the voting system to define the security, reliability and transparency. We need easy, secure and less time consuming system in which user do not need to carry any ID and voter list number. The person at the polling booth has to show his Finger, this fingerprint with already existing AADHAR CARD database stored on the personal computer system, if the data matching with the already stored information, the voter is allowed to cast his vote. [3]

Amanpreet kaur et al. came up with Secure E-Voting Using Ethereum Blockchain. The blockchain emerges as safer, cheaper, more secure, more transparent, and easy-to-use e-voting systems. This paper intends to provide implementation and tested sample e-voting application as a smart contract for the Ethereum network using the Ethereum wallets and the Solidity language. The Ethereum blockchain will hold the records of ballots and votes where users can submit their votes via an Android device or directly from their Ethereum wallets and these transaction requests are handled with the consensus of every single Ethereum node. [4]

**III. METHODOLOGY**

**3.1 Block Diagram and Description**





3.2 Algorithm

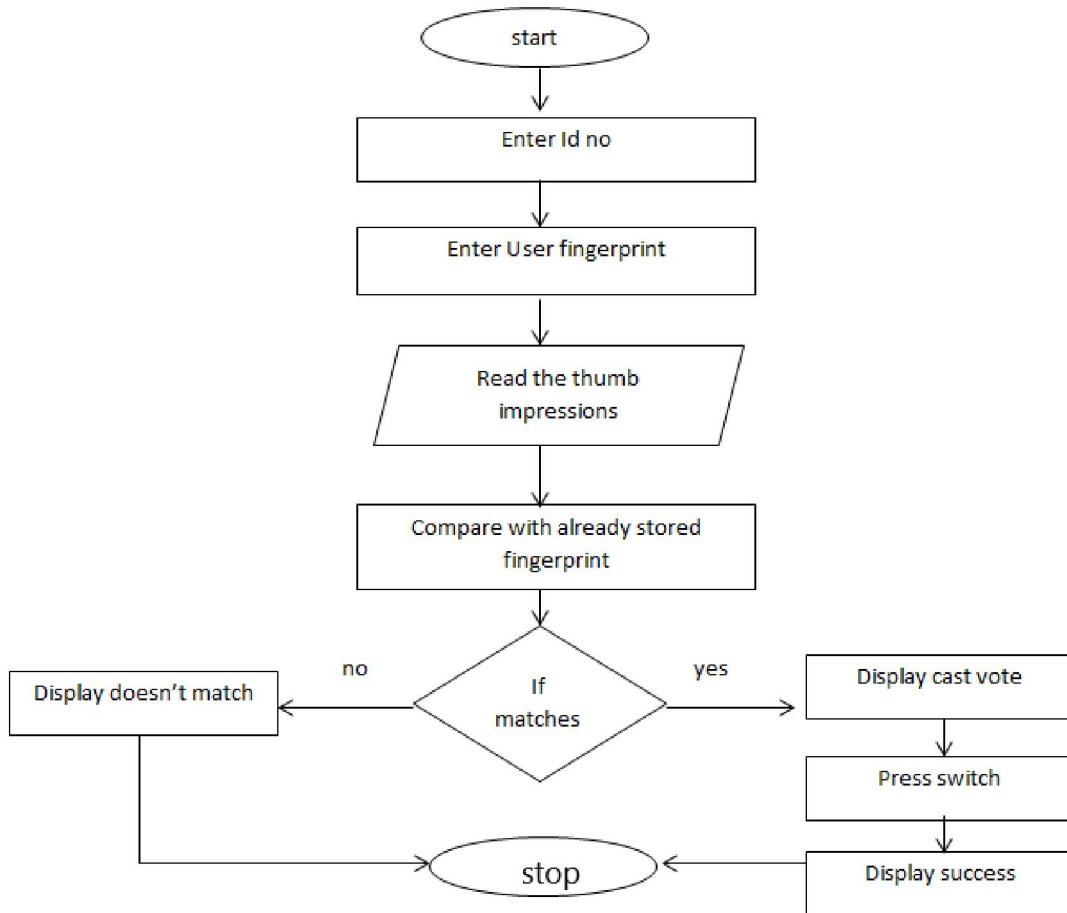


Fig. 3.2.1 Algorithm

3.3 Simulation

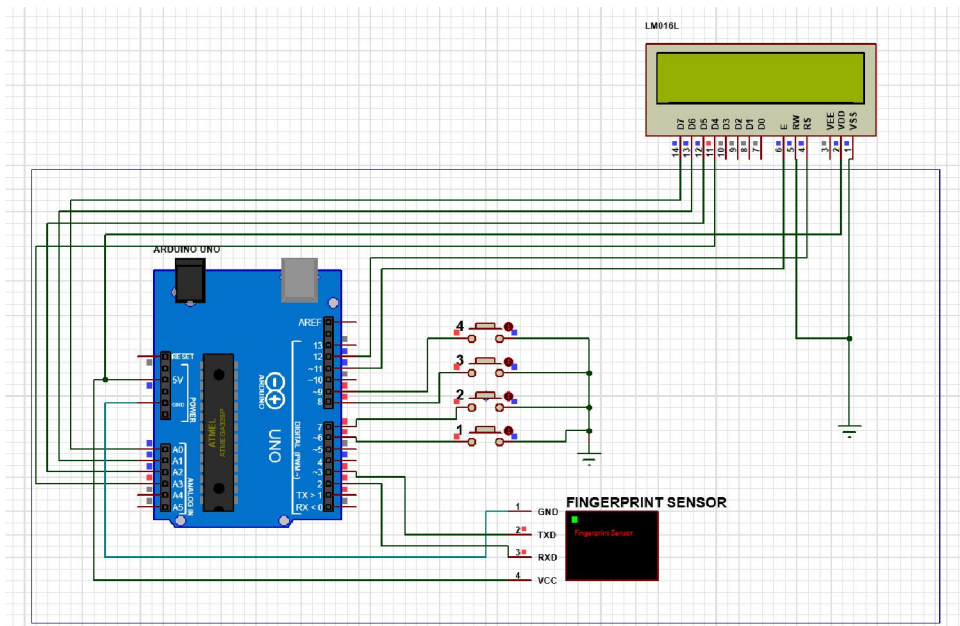
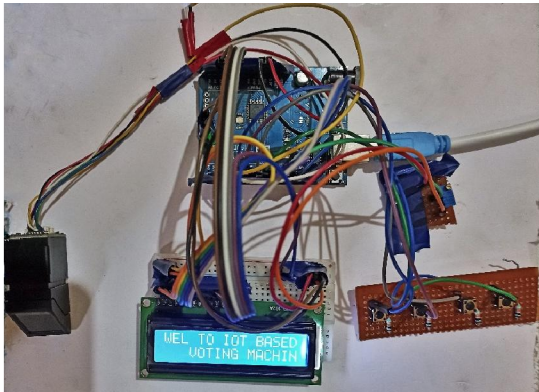


Fig. 3.3 Simulation

**Output****IV. RESULTS**

In this project we will observe that we can get rid of rigging and here the voters are requiring to register and their data will be stored in the database. Now the user needs to scan the fingerprint and now the Arduino starts processing and LCD lights up showing a welcoming message and the fingerprint sensor reads the fingerprint of the user and it searches in the database. Once it finds the data of the user then the LCD displays ready to vote and the user will cast his vote. In the same way if there is any rigging then LCD displays already voted and if the user is not registered then LCD displays not matched. In this way we can complete the voting without any rigging and malpractice to elect the right leader for the better society.

**V. CONCLUSION**

For over a century, fingerprints have been one of the most highly used methods for human recognition; automated biometric systems have only been available in recent years. This work is successfully implemented and evaluated. They arrived results were significant and more comparable. This project enable's a voter to give his/her vote and avoid proxy vote or double voting and provide highly secure, quick to access and easy to maintain all information of voting, highly efficient and reliable due to use of fingerprint scanner it reduces or remove unwanted human error. In addition, this voting system is capable to handle multiple modules in various centers and provide better scalability for large election.

## VI. FUTURE SCOPE

In Future work, an exhaustive research about the e-voting should be done. It aimed to analyze the new technology for reliable transmission which improves the efficiency of the voting system. It includes some new algorithm for enhancing the system and its services. We can further extend this project to such a state that Voter can do his voting even from his own mobile phone or PC or Laptop. All kind of security aspects are kept in mind and then that system will be developed. We know it is difficult as in some villages there are lot of basic problems, but we can make some hybrid system for them as well. All these efforts are only for better tomorrow

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