# EVM Through Id and Fingerprint Verification using RFID

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*Abstract:* **There are around 167 Democratic countries in the world. But only around 20 countries were using Electronic Voting Machine for conducting the Election. Some of the developed countries in the world such as England, France, Germany, United States do not use the EVMS. The Supreme court of Germany has stated that voting through this technology is unconstitutional. India is one among the largest democratic country in the world and there are around 911 million people. India is also one of the largest populated voting countries. The maximum amount of votes polled are around just 67% which is considered to be very less taking into the account of population in India. One of the Greatest controversies is fake votes. There have been several reports that fake voters have been casted for the voters who were absent on the voting. This incase have proved to be real when celebrities like Shivaji Ganesan, Siva Karthikeyan etc., have been reported that their vote has be casted by fake person. So many citizens have complained about this issue publicity to media during Assembly election, 2019. There has been a rule that those who complain that their vote has been taken by another person still the elector must to given permission to cast vote according to the section49-P. But this is not the case happened in 2019 Assembly elections. Many people who lost their vote have not provided any other chance.**

*Keywords: Arduino, Voting Machine, RFID, Fingerprint sensor.*

## I. INTRODUCTION

In our system we have developed a two-tier verification system. This two-tier verification is divided in two processes. The first process involves in the verification of user's identity which is provided to him by the government, which may be his Aadhar identity or voter ID our idea is to make the identification card upon the RFID tag which is the basic component for one of our verification systems. This RFID tag is verified through RFID reader for first step of verification. In the second step of our verification, we are going to deal with the Biometric characteristic of the human body which is nothing but the fingerprint. That is the impressions taken from the ridge of the skin of the finger. This has been used as the form of identity for the person for over centuries in human history. By combining the previous two step of verification we provide an authentication system for allowing only the appropriate verified used to cast their vote. As we discussed earlier a major controversy in conduction elections in India is fake voter. Hence, we need a two-tier security for each vote in our country. Our System exactly designed to overcome this problem by making unique ID verification and biometric verification for each voter. Our system will verify whether both data's are matching. If they do not match then our system will turn ON the buzzer to indicate that user data's does not match.

## II. OBJECTIVE

The main objective of our paper is to reduce or completely avoid the fake votes in voting system of our country. Our system exactly designed to overcome this problem by making unique RFID verification and biometric based verification for each voter. Our system will verify whether both the data are matching. If they do not match then our system will display that it doesn't match with each other.

## III. LITERATURE SURVEY

[1] V. Kiruthika Priya, et al., presented Arduino based smart electronic voting machine with the help of IOT Electronics and Informatics (ICEI), which helps us to make a vote with use of an Arduino and IOT with lesser security.

[2] Rahil Rezwan, et al., explained paper is about Biometrically secured electronic voting machine in the year 2017, has a high security by using the fingerprint verification helps to provide more security through unique for everyone.

[3] Sunita Patil, et al., introduced Electronic smart voting system with secured data identification using cryptography in year 2018. This paper describes the Function of ESVS which is used with the biometric authentication system along with the OTP based on the verification process of voting system. The ESVS utilize the Aadhar number and identification of vote.

[4] Himanshu, et al., presented the Application for online voting system using android device introduced in the year 2018. It describes the descriptive pattern represent that the election should decide which candidate is capable for the future of the country. This system has high level security, but the existing system has the flaw that the vote has to wait in queue for casting their vote has lesser security in the present time.

[5] Qasim Abbas, et al., discussed the Location free voting system with the help of IOT technology introduced in the year 2018. In this paper tells that Internet of Things (IOT) is becoming the faster which connect to the many things. Annalisa Franco presented the Fingerprint: Technologies

and Algorithms for Biometrics Applications in year 2011. This paper describes that fingerprint and its algorithms are taken place in verifying a particular person which are unique to very known men make it simple to cast his own identification by anyone. Makes better use of existing knowledge and links it to the future collaborations.

[6] Rohan Patel, et al., presented the paper on Fingerprint Based e-Voting System using AadharDatabase in year 2015. It describes that it is a electronic voting machine which works on the basisof the Aadhar database which verifies the voter identification by comparing his or her fingerprint with their given voter card or the Aadhar card in their database and allows to vote which makes it high level security.

## IV. IMPLEMENTATION

The fingerprint sensor is used to verified the person as an authenticate user. If fingerprint matches that will be repeated. If fingerprint doesn't match the person is not verified and unauthenticated user cannot be able to vote and it will automatically display. Radio Frequency Identification (RFID) refers to wireless systems.
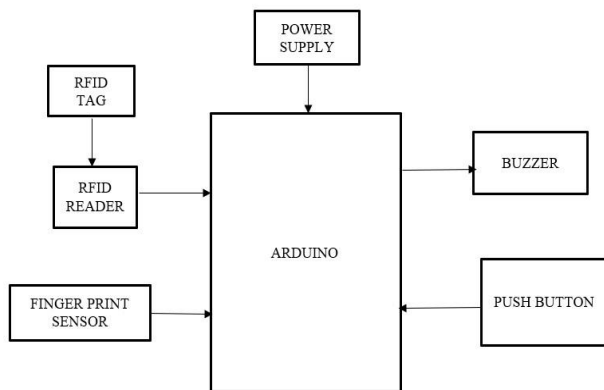


Fig 1: Block Diagram

RFID (radio frequency identification) is a form of wireless communication that incorporates the use of electromagnetic or electrostatic coupling in the radio frequency portion of the electromagnetic spectrum to uniquely identify an object, animal or person.
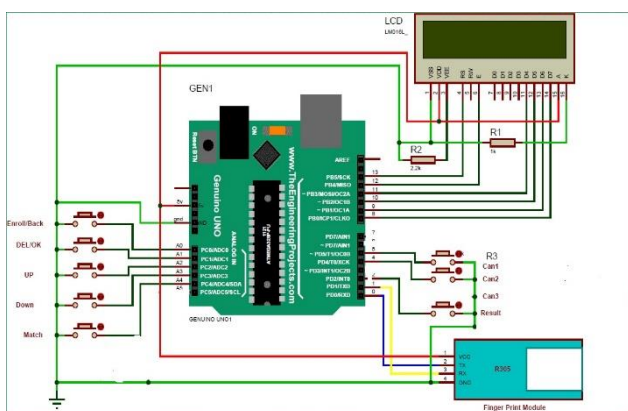


Fig 2: Circuit Diagram

RFID system consists of three components: a scanning antenna, a transceiver and a transponder.

**RFID reader** - The scanning antenna and transceiver are combined; it is called as an RFID reader. It is a network-connected device that can be portable or permanently attached. It uses radio waves to transmit signals that activate the tag. Once activated, the tag sends a wave back to the antenna, where it is translated into data.

**RFID Tag -** The transponder is in the RFID tag. The read range for RFID tags varies based on factors including the type of tag, type of reader, RFID frequency and interference in the surrounding environment or from other RFID tags and readers.
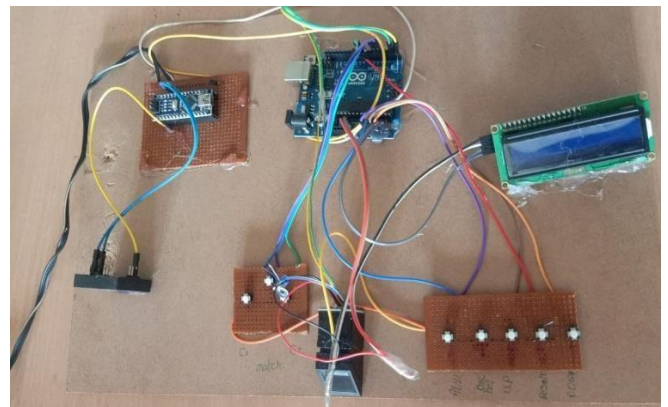
## V. RESULT



Fig 3: Front View of Proposed Prototype

## CONCLUSION

To Simplify, we have just presented a project that how our voting system can be made in the recent future for fair voting. In this method, the process of verification involves of ID and fingerprint from the database. This is faster and secured way of holding elections. The system interlinked with voter ID or Aadhar card and biometric authentication. The security was the main concern of our project. So, it is better than other traditional method. By using this system, the national voting system will be more secure, faster, easy to use and more economical. The system also consumes very low power and the device is easy to carry.

## FUTURE SCOPE

Future work of the project includes if a user the identification-centered retinal scan process, the voter is capable of solving the authentication issues by 100%. Our scheme is connected to the AADHAAR to eliminate vote duplication. The voting scheme is interconnected with three various specifications like AADHAAR ID, Biometric Authentication. There includes no aspect to assume the position ringing in voting. In case a user the IRIS technology for authentication aims, they can achieve more effective results than the Biometric frameworks.

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