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# RFID BASED ON FINGERPRINT SENSOR VOTING MACHINE

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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 country. 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 controversy 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 Ganesen, Sivakarthikeyan 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 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.

In Our present work we have developed a prototype and tested successfully an Arduino Uno Based Aadhar facilitate Voting Machine processing a Two-Tier fingerprint security.

Keywords-Arduino, Voting Machine, Fingerprint sensor

**Introduction-**

In our system we have developed a two-tier verification system. This two-tier verification is divided in two process. The first process involes 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 system.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.

**A.Objective-**

As we discussed earlier a major controversy in conduction elections in India is fake voter. These kind of fake voting is occurred mainly because of the less polling percentage in our country even if the percentage increases already it has shown It effect on late commerce during election day.

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.

**B.Literature Survey-**

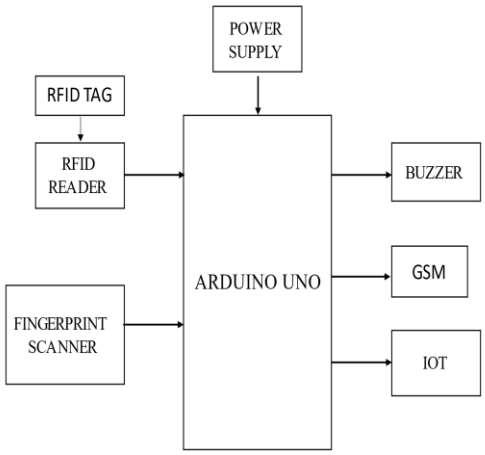
The first system Electronic smart voting system with secured data identification using cryptography introduced in the year 2018 author name Sunita patil, Amish Bansal, Utkarsh Raina.This paper describes the Function of ESVS which is used with the biometric authentication system along with the OTP based on the verification process of voting system. The ESVS utilize the aadhar number and identification of voter.

The second paper is about the Location free voting system with the help of IOT technology introduced in the year 2018.The authors Qasim Abbas, Tariq Ali,Hussnain Abbas the description of this paper is the internet of things(IOT) is becoming the faster which connect to the many things. The voters to vote in any location without any restriction all over the world which consider privacy and security.

The Third paper represented as the Application for online voting system using android device introduced in the year 2018. The author Himanshu Vinod Purandare the descriptive pattern represent that the election should decide which candidate is capable for the future of the country. This system has the 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.

The forth paper which is Design of Secured of E voting system introduced in the year 2013,the author are Hanady Hussien. This system is able to spread through widespread. Security is the problem in such system. The This E voting system requires the system to fulfill the security. The system employees RFID to store all condition that comply with the rule of government to check voter eligibility.

## BLOCK DIAGRAM



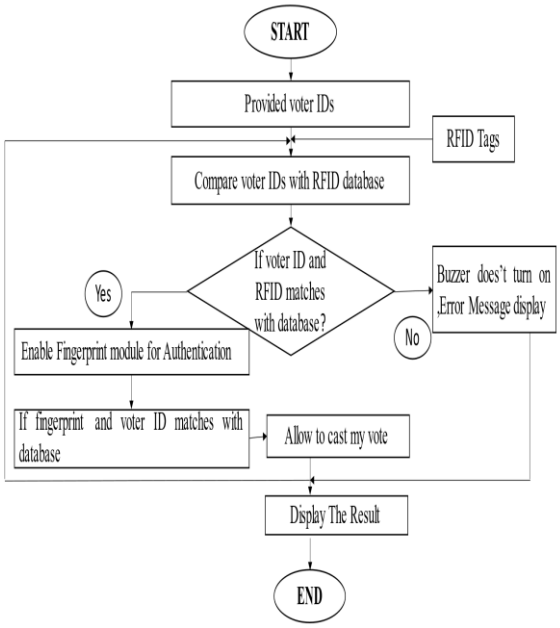

**Working Principle-**

Our two tier verification system working can be explained as two process. First we are going to see about the working principle of RFID verification .The RFID tag is started with the data of the user such as Name, Aadhar ID etc. Each RFID tag will be given with a separate unique data. These stored data can be verified only by the RFID Reader. This RFID reader will read the data in RFID tag and it can be verified with the user provided data on spot direct by the officer.

In the second step of verification process each user's fingerprint Will be started either in the system or fingerprint sensor R305.These fingerprint data are simply available with the Government of India they can effortlessly access it form Aadhar data's .Now the data for fingerprint will arrive and it will be verified by the IOT with RFID data and will allow the appropriate user if they match. If they doesn't match with each other then buzzer will turn ON to indicate that user provided data's doesn't match.

This process actually takes 2-3 minutes, which is also a quick process of two tier verification.

**Flow Chart-**




The flow chart explains the following process of the system which the connect to the circuit diagram. The RFID tag which stores the information of the voter. Then the RFID reader used to read the RFID tag.

The fingerprint sensor is used to verified the person as an authenticate user. If the fingerprint matches that will repeated. If the fingerprint doesn't match the person is not verified and unauthenticated user cannot be able to vote and the buzzer sound will turn ON if not.

**Algorithm-**

The voting machine process is shown in following step that how to vote and how it has been cast.

Step 1: Start

Step 2:Using RFID tag store the voters information

Step 3:RFID reader scans the RFID tag.

Step 4:Press the finger to the fingerprint sensor

Step 5:The LCD display shows that the person is matched or not

Step 6:Upload the program code to the Arduino.

Step 7:If the fingerprint matches the user authenticate can able to vote their cast

Step 8:If it doesn't match the buzzer will turn ON .

Step 9:Stop

The first 3 steps are using the RFID reader and tag collect the voter ID and their information. And the forth coming steps are upload the program source code and voters information.

The last 3 steps that checks that whether the following fingerprint match with the person or not .The fingerprint matches with the person is allow to continue to vote and if not matches the fingerprint LCD display shows that the person is not verified and the buzzer is turn ON thus the process of voting has the two tier verification system. IOT is also used in the system shows the wheather the user is authenticate and matches with fingerprint with time to check the count of voting also used in the following system. The unauthenticated user is also shows with the fingerprint not matches in the display.

**Expected Outcome-**

We have just presented an idea or concept 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.

**Application-**

- It is mainly used in verification process of during election.
- System is easy to operate.
- Economical feasible.
- Requirements of man power is less.
- Only authenticate user can vote.

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