

BIOMETRIC VOTING MACHINE USING UID(AADHAR)

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Abstract : *Now a days there are many cases of fake voting ,or cross voting due to which wrong candidate get elected in elections. Proposed system makes voting a fearless of violence and that increases the percentage of voting.*

Project aims to present a new voting system employing finger print and QR code authentication in order to avoid rigging and to enhance the accuracy and speed of the process.

The system uses finger print and QR code of Aadhar card for voter identification as we know that the finger print of every human being has a unique pattern and QR code of any ID is also unique

Thus, it overcomes the drawback of present EVM.

Voter's scan their QR code Of Aadhar card as input it will gives details of voter and system will extract Aadhar number which is unique for every voter. Database consisting of the finger print of all the eligible voters. During elections, the finger print of a voter is entered as input to the system. This is then compared with corresponding finger print of Aadhar number which extracted during scanning of QR code. If the input pattern matches with pattern in the available record, access to cast a vote is granted. If the finger print doesn't match with the records of the database or in case of repetition, access to cast a vote is denied. Voter will be provided with feedback of their voting i.e. candidate Name to which vote has been casted will be displayed.

Keywords: Finger Print, QR code, Biometric, voting machine, Aadhar, Arduino Mega, Authentication

1. INTRODUCTION

The biometric is a technology that analyze the biological data. it has increment in e-services and accessible electronically. It improves in the security of election process with the help of new technologies in voting system. The information about voter data is stored, recorded and processed the above information in digital format. This system is designed for voting machine by using the fingerprint Matching and QR-code Scanning method. Here voter's finger print and QR Code Of UID(Aadhar) are used for identification. Voter scan their QR code Of Aadhar as input it will gives details of voter and system will extract Aadhar number which is unique for every voter. During voting when the voter places his/her finger on the scanner then system will then compared with corresponding finger print of Aadhar number which extracted during scanning of QR code. If it matches then system will allow the voter to poll his vote and otherwise prevent the voter from polling. Massive projects and researches are going on to discover advanced voting systems.

I) Paper based voting

Electronic Voting Machine (EVM) is an electronic device used to cast votes in place of ballot papers and boxes which were used before in conventional voting system. All earlier elections be it state elections or centre elections a voter used to vote his/her favorite candidate by putting the stamp against his/her name and then fold the ballot paper and drop it in Ballot Box.

Drawback-

- a) It is very difficult to collect the ballot boxes and transport to main centres.
- b) Errors may occur during manual counting.
- c) It is time consuming process.
- d) Chances of invalid voting.

II) E-Voting-

E-voting is the voting process electronically, without the use of paper and ballot boxes. In this system, election data is recorded, stored and processed primarily as digital information. It is defined as any voting process where an electronic means is used for votes casting and results counting. E-machine consists of buttons and symbols of respective candidate which when pressed the count of votes get stored in the EVM. But still, there is a practice of fake votes in this system. So, further development should be implemented to prevent these kinds of activities.

Drawback-

- a) security Problem
- b) Possibility of illegal voting.

2. WORKING

The traditional voting machines consist of a normal voting buttons without any biometric authentication in it. As a result, there are chances for multiple vote problem i.e. the chances of fake vote increases. Also, some people think that in this process there can be error in counting the number of votes and the results can be manipulated according to the needs of the political parties. Hence to overcome these issues we will be presenting an EVM with some advancement such as QR code (scanning) of UID and biometric (Fingerprint) authentication. System will send SMS to authorized voter with details of voting location, date and time of voting. In our project we will be using digital touch screen to display the contents required during the process and double authentication. It will include fingerprint (biometric scanning) and QR code (scanning) of UID along with the address and age authentication which will ensure that the person belonging to that ward only, votes the representatives for the election process. Biometric Voting Machine (BVM) consists of the fingerprint scanner and QR code scanner. Initially Voter has to scan their QR code of UID (Aadhar Card) then it will generate information about voter.

System will extract date of birth, Aadhar number, and address of voter from the information. Then there will be a screen which will provide the options to the users which will display the name of the candidate representing their party in the election along with the name of the party. The voter needs to tap on the screen in favor of the candidate whom he/she wishes to vote. After this the user needs to do the authentication process i.e. fingerprint scanning. It will check or authenticate of fingerprint of voter and corresponding fingerprint of Aadhar number which was extracted by system at the time of QR code was scanned. If authentication fails or if he/she is a invalid user or if he/she has already done voting then system will give warning. If the user passes the authentication processes then the vote will be counted and incremented in the respective party count. A successful voting message will be displayed and again the initial screen will appear.

System Features:

- System will contribute to faster vote casting, effortless counting and delivery of the election results.
- Gaining transparency, trust and integrity of the voters.
- Provide feedback to Voter.
- Less manpower required.
- Avoids invalid voting.

3. PROPOSED SYSTEM

The main components of the voting system is listed as follows,

1. Fingerprint Identification Module
2. Arduino mega 2560
3. TFT Display
4. Personal Computer
5. Power supply

3.1 Fingerprint Sensor:

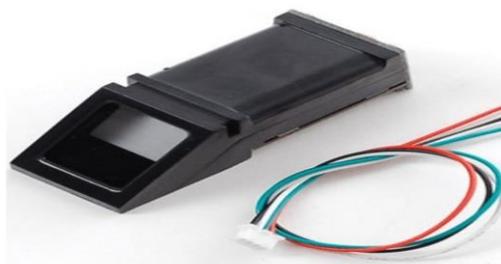


Fig 3.1 Fingerprint Sensor:

Fingerprint sensor is a module which captures fingers print of voters.

3.2 ARDUINO MEGA 2560:

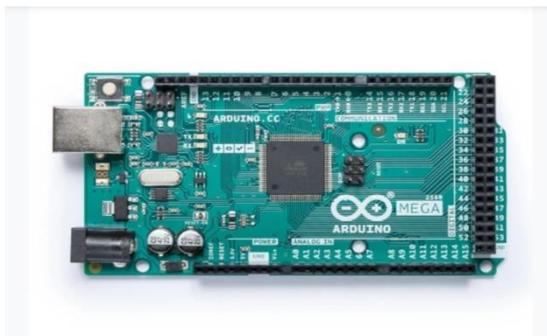


Fig 3.2: ARDUINO MEGA 2560

The mega 2560 is a microcontroller board based on the Atmega 2560. It has 54 digital input/output pins of which 15 can be used as PWM outputs. 16 analog inputs, 4 UART's (hardware serial ports), a 16 mega Hertz crystal oscillator. A) Power-The mega 2560 can be powered via the USB connection or with an external power supply. The power source is selected automatically. B) memory-It has 250 KB of flash memory for storing code, 8 KB of SRAM and 4KB of EEPROM.

3.3 TFT Display:



Fig 3.3: TFT Display

TFT Display is used to display the status to voter.

3.4 Personal Computer:

Here the PC is used to store the database of the voters and is programmed using visual basics. It is also used to display the details of the voter when the finger print is recognized.

3.5 Power Supply:

Power supply is an essential component for the processing of entire system. Arduino mega 2560 requires a voltage of 5 volt and minimum current of 700mA to work. In this project we have decide to use Samsung USB charger with power supply 5V/2A.

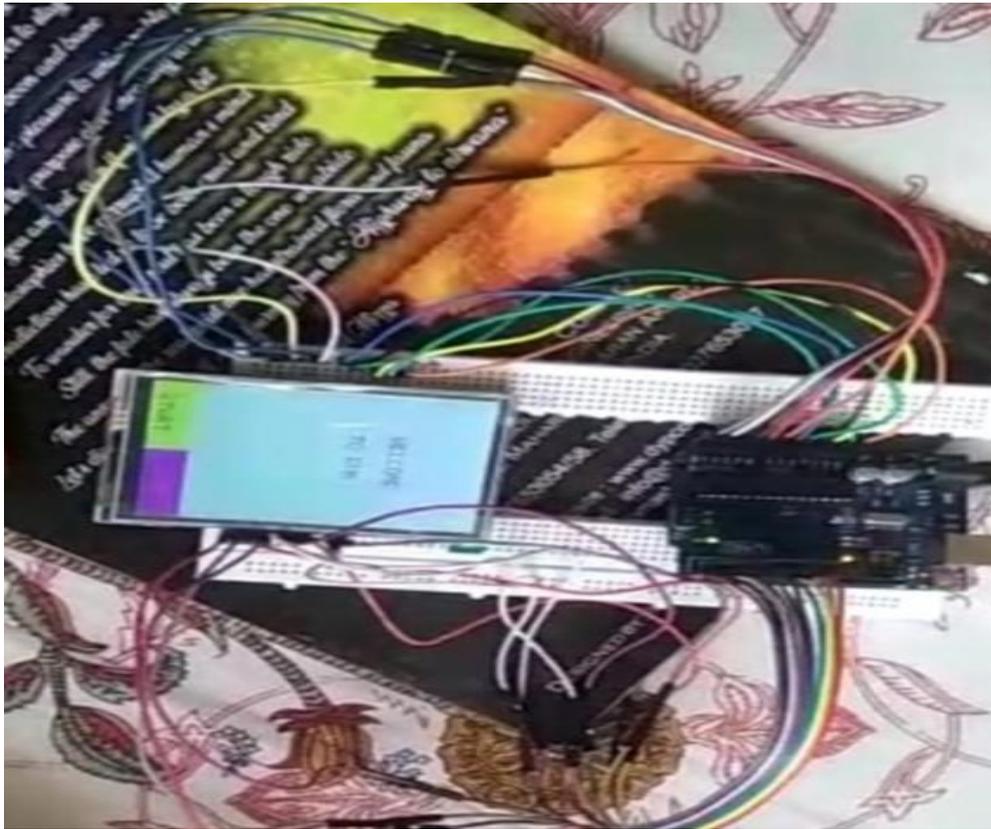


Fig a: biometric voting machine using UID(Aadhar)

3.CONCLUSION

This System is an idea or concept that how our voting systems can be made in the recent future for “free and fair” voting also System will be with faster, secure, user friendly, accessible and reliable voting . The application of BVM will enhance the authenticity of a voter thereby leading to a fair election. The system proposed in this paper , when put into actual functioning will revolutionize the world of voting. We know that for these things highly efficient system and application software, a large database is required. By using systems like this the whole process of election will be in a free and fair manner. This system is Cost & Time efficient as well is fake voting resistance.

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