



R.M.Thadi¹Jadhav Hemant², Kale Bharat³, Zagade Pramod⁴,Adalinge Gahininath⁵

¹Department of Electronics and Telecommunication SKNSITS Lonavala 410401, hodentc.sknsits@sinhgad.edu

²Department of Electronics and Telecommunication SKNSITS Lonavala 410401, shanihrj@gmail.com

³Department of Electronics and Telecommunication SKNSITS Lonavala 410401, bharatkale199@gmail.com

⁴Department of Electronics and Telecommunication SKNSITS Lonavala 410401, pramodszagade93@gmail.com

⁵Department of Electronics and Telecommunication SKNSITS Lonavala 410401, bharatkale199@rediffmail.com

Abstract

The main view of this paper is to develop and provide efficient voting machine system to the government, the fingerprint based E-voting system using aadhar database, for a fingerprint we use aadhar card database. The proposed voting system can handle voting at various level such as vidhansabha, parliamentary, municipality etc. This entire data of each and every person persist in the database of government of india. This system will give transparent in the voting process by assuring the voters that their votes will be in favor of the right candidates of their choice. The secure design of this system will make voting process more reliable, more accurate, and faster, less manpower.

Keywords: EVM, Fingerprint, Biometric, Fingerprint module.

1. Introduction

After India get freedom from British government, government of India provide a right to Indian people to elect their interested leader.

To conduct the election or control the election our country has separate commission was introduced. Which name is Election commission of India (ECI). This commission not support any political party. According to rules which are defined in law commission is works.

Fingerprint module for voting machines and different identity rather than voting ID card is mentioned during this project.

The voter person should show his voter identity card when he goes for voting on voting booth. This method is time consuming because the person needs to check the ID before voting is done or allow to voter poll his vote. To avoid this time consuming process we use fingerprint module wherever no need to carry his voter ID when he goes to voting. The voter should only show his finger at the voting booth. This fingerprint module read the detail from fingerprint pattern. This information passes to system control unit for the verification. The system compare the data which is comes from fingerprint module and which available on system. If data match then system can allow the voter to cast his vote, if not then message is show on LCD person not allowed to cast his vote. This mechanism carried out by manually using the switches. When voter is allowed to caste the vote then system show the different region and display message on LCD "ENTER YOUR REGION NUMBER", after entering the

region number then candidate list will be displayed on LCD. Voter can cast his vote to according to his choice.

Security is the heart of voting system. So it is important to design of voting machine should be secure. Security should hide the how many voting can get different political party from public before result declaration, not manipulated by unauthorised or authorised person.

The secured e-voting process can be done by linking the voting system with Aadhar database; it is unique identification number for every Indian citizen. With Aadhar database E-voting system can result in secure E-voting for election. No two person database is same in this system as it uses a biometric.

Biometrics is science which measure and analysing the biological data. When biometrics related with information and technology that measure the human body characteristics, such as DNA, fingerprint, eye retinas, voice patterns, facial patterns and hand measurement for authentication purpose. During this paper we use voter person thumb impression for purpose of identification and authentication. Each person has different fingerprint pattern it help increases the accuracy of the system.

2. EXISTING METHODOLOGY

A voting system in which the election data is stored, recorded and processed primarily as digital information is called as an electronic voting system. Electronic voting is also called as E-voting. Any voting process where we use electronic means for

voting and it's counting is known as electronic voting. In E-voting voters record their votes in electrically secured machine. In daily life we use number of voting systems like optical scanners. Optical scanners read manually marked ballots to entirely electronic touch screen voting systems. In voting process we use specialized voting systems like DRE (direct recording electronic), internet, RFID, national IDs, computer networks and cellular systems etc.

Fig No. 2 Arduino mega 2560

The mega2560 is a low-power CMOS 8-bit microcontroller based on the AVR enhanced RISC architecture. By executing powerful instructions in a single clock cycle, the mega 2560 achieves throughputs approaching 1 MIPS per MHz allowing the system designed to optimize power consumption versus processing speed.

3. Block Diagram.

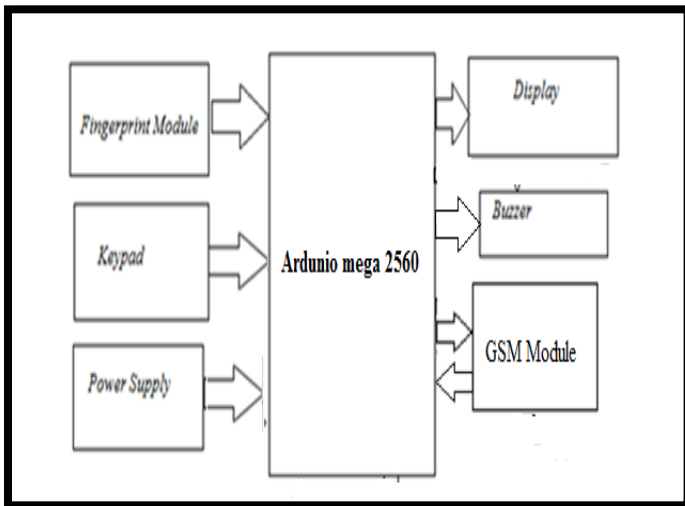


Fig No. 1 Block Diagram

4.2Fingerprint Module:-

In this paper, Finger print module is used for authentication purpose. There is a scope to illegal of votes if we can't use biometric e-voting system. There are chances to use of Voting ID by some other person to cast some other vote illegally. To avoid this, we are using fingerprint module as biometric in voting system. Finger prints pattern of each andevery person may is different. None of a person in the earth has same kind

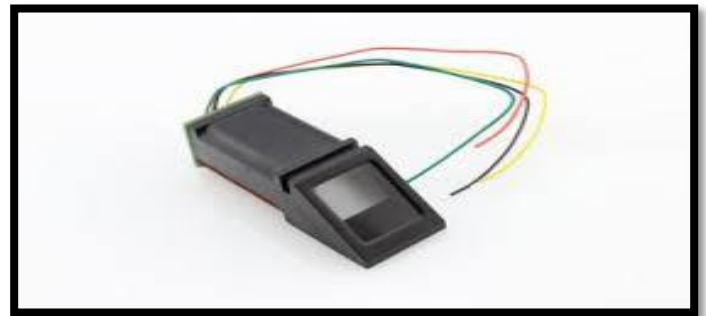
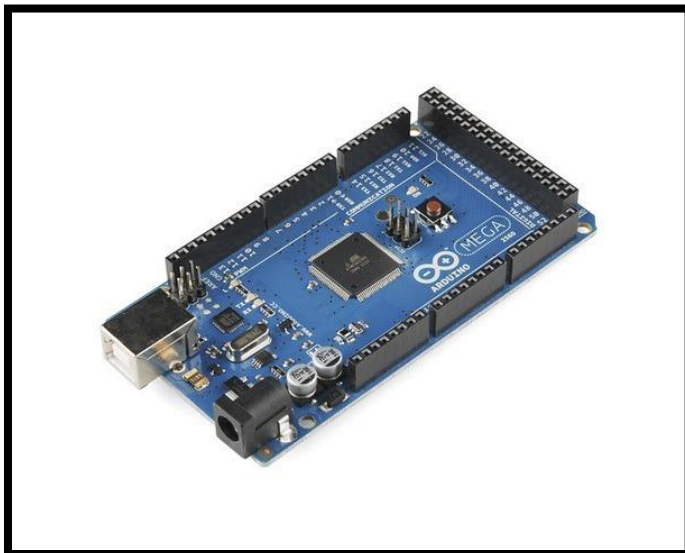


Fig No. 3Fingerprint module

Of finger prints pattern. Finger print optical scanner is an input module forArduino mega 2560.

4. COMPONENT & DESCRIPTION

4.1 Arduino mega 2560:-



4.3Liquid Crystal Display:-

LCD stands for Liquid Crystal Display. LCD components are used with the microcontrollers, which mean that they cannot be activated by standard IC circuits. They are used for displaying different messages on a LCD. LCD display is an output module which has been controlled by arduino mega 2560. When user places finger on fingerprint module, user details will be displayed on LCD screen.



Fig No 4: LCD Display

If your thumb pattern matches with data base, one message will be displayed on "Authentication SUCCESSFUL.PLEASE CAST YOUR VOTE".

4.4 Buzzer:-



Fig No 5: buzzer

A buzzer is an audio signalling device, which may be mechanical, elect mechanical, Piezoelectric .typical uses of buzzer include alarm devices, timers and confirmation of user input such as a mouse click or keystroke.

4.5 Switches:-

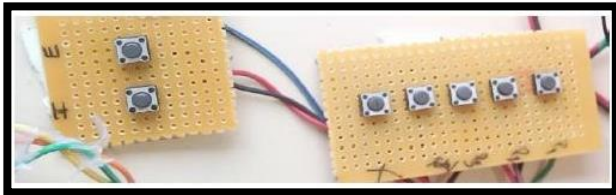


Fig No 6:Switches

In this project, switches are used to cast vote by voters.

5. System framework

System framework for secure voting consist of a keypad, graphical LCD, microcontroller, fingerprint module. Arduino mega 2560 is microcontroller is having facilities for communicating with computer. It should programme for serial communication on mega 2560's any digital pin. R305 fingerprint verification module consists of optical fingerprint sensor high performance Digital Signal Processor and Flash memory. It boasts of functions such as fingerprint login, deletion, detection, verification, upload and fingerprint download etc. The voter person information is stored in fingerprint module, whereas, the candidate database which represent in election along with voting record is kept in microcontroller flash memory and remote site through Ethernet port.

6. Working of proposed system

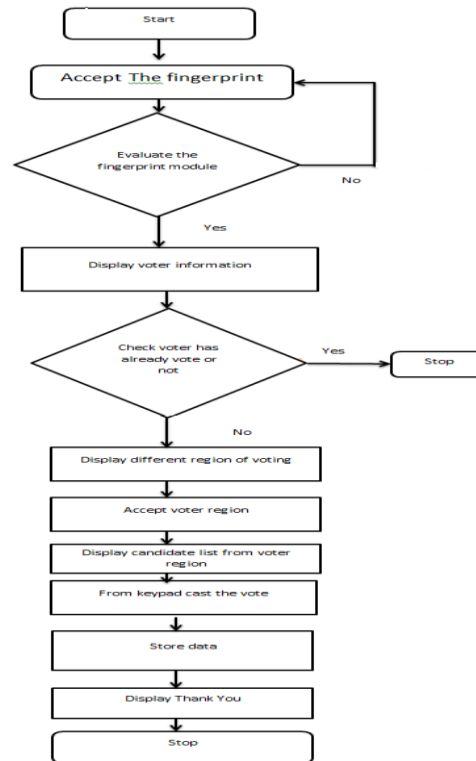
The main phase of system is registration, authentication, casting and counting. The system implementation elaborated following steps:

6.1 Algorithm

1. Start.

2. Store Voter ID in the database of system.
3. Compare the voter ID with system database.
4. If voter ID information is matched with the database then allow to voter for authentication; if information is wrong then got to step 5.
5. Send error message to the system.
6. Enable the fingerprint module for second authentication.
7. Match the information of user with voter ID if match then go to step 8. If not then go to step 5.
8. Display candidate list according to area of voter.
9. Allow to voter to cast the vote.
10. Enable EVM button to cast the vote.
11. Store the data on external memory.
12. Store data on server.
13. Send complete message to system.
14. Stop.

6.2 Flowchart



7. Advantage

REFERENCE

- **Authentication:** only authorized voters should be able to vote.
- **Uniqueness:** No voter should be able to vote more than once.
- **Accuracy:** Voting system should record the vote correctly.
- **Integrity:** Number of casted vote must not be modified.
- **Verifiability:** possible to verify that votes are correctly counted in the final tally.
- **Remote voting:** Voter can vote from any place

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8. Conclusion

In this paper we proposed AADHAR based remote E-voting system have many advantages over traditional way of voting. This system prevents access to illegal voting, easy to use, maintain integrity of voting system. System prevents multiple votes by single person and check eligibility of voter. It also provides remote voting means person can vote from anywhere.