

BIOMETRIC SYSTEM USING ARDUINO

Dr.M.Shafi Shahsavar, S.Uma Maheswari, U.Gopi Krishna, K.Tejaswini, V.Hari Krishna

ABSTRACT

Voting System was implemented with Arduino technology. In this system, a voter can poll his vote easily. In this database server, all voters' information was stored to register in this system, the voter should fill a registration form with the help of a user id and password. This information will be checked by the database server. Because all the information about the voter would be already there is anything wrong, the system will not allow the voter to poll his or her vote. This system is helpful to the voter's decreases the time of the voting process also. It is a more Secured way. The fingerprint is important identity of the user. The fingerprint Voting System is user-friendly. It has a simple architecture, responses very quickly manner, It reduces the polling time, Easy to carrying to polling center from the polling box, Reduces the staff of the voting center, It provides easy and accurate counting without any troubles.

Keywords: Voting, Biometric system, Ballot Boxes, Arduino, LCD

Correspondence Author:

Dr.M.Shafi Shahsavar, Associate professor, Department of ECE,
Chalapathi Institute of Engineering and Technology,India.

Email:gurudevaa@gmail.com

S.UmaMaheswari Department of ECE

Email:samanthulauma@gmail.com

U.Gopi Krishna Department of ECE

Email:gopikrishnachowdary20@gmail.com

K.Tejaswini Department of ECE

Email:Kathi.tejay2k@gmail.com

V. Hari Krishna Department of ECE

Email:vallapuneniharikrishna037@gmail.com

INTRODUCTION

Election is the act of party casting votes to elect on individual for some type of position. Election may involve a public or private vote depending on the position. Most position in the local, state, and federal governments are voting on in some type of election. In paper-based elections, voters cast their votes by simply depositing their ballots in sealed boxes distributed across the electoral circuits around a given country. When the election period ends, all these boxes are opened and votes are counted manually in presence of the certified officials. In this process, there can be error in counting of votes or in some cases voters find ways to vote more than once. Sometimes votes are even manipulated to distort the results of an election in favor of certain candidates. In order to avoid these shortcomings, the government of India came up with direct-recording electronic (DRE) voting systems which are usually electronic voting machine (EVM). These devices have been praised for their simple design, ease of use and reliability. However, it has been found that EVMs are not tamper proof and are easily hacked. Moreover this attacks, hardware as well as software, go without any detection but are quite simple to implement.

WORKING

Working of this Biometric Voting System for Election is a little bit complex for beginners. First of all, user needs to enroll finger or voters (in this code max limit of the voter is 25) with the help of push buttons/keys. To do this user need to press ENROLL key and then LCD asks for entering location/ID where finger will be a store. So now user needs to enter ID (Location) by using UP/DOWN keys. After selecting Location/ID user needs to press an OK key (DEL key). Now LCD will ask for placing finger over the finger print module. Now user needs to put his finger over finger print module. Then LCD will ask to remove the finger from finger print module and again ask for placing the finger. Now user needs to put his finger again over finger print module. Now finger print module takes an image and converts it into templates and stores it by selected ID in to the finger print module's memory. Now voter will be registered and he/she can vote. By same method all the voter can be registered into the system

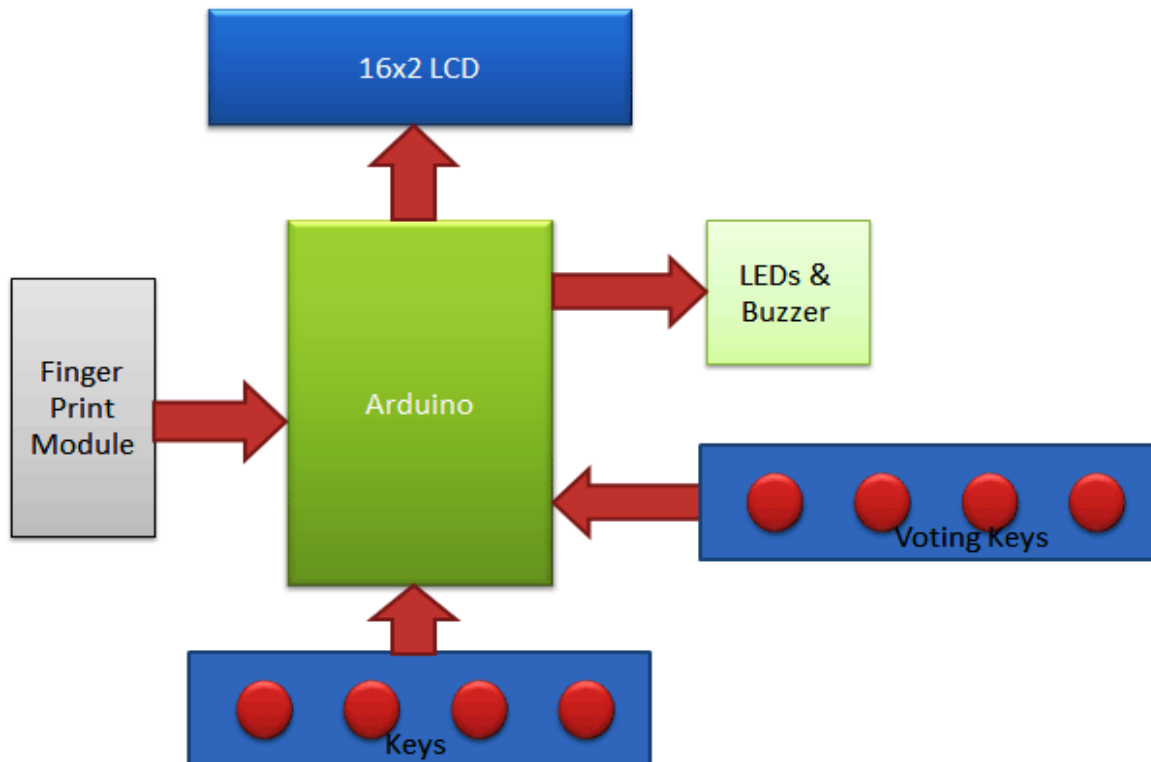


Fig 1: Block Diagram

Voting machine consists of Arduino Uno, Fingerprint sensor, LCD display, SFG Demo V2 Software, switches. Arduino UNO acts as the controller unit. In order to unlock the device and as security a Finger print sensor has been attached to the machine. LCD and switches is also used. In this project we have used four push buttons for four different candidates. We can increase the number of candidate but for better understanding we have limited it to four. When any voter press any of four button then respecting voting value will increment by one each time. After whole voting we will press result button to see the results. As the "result" button is pressed, Arduino calculates the total votes of each candidate and show it on LCD display. Circuit of this project is quite easy which contains Arduino, push buttons and LCD

METHODOLOGY

Flow chart of the system, Fingerprint Sensor the FPM10A fingerprint sensor was used and shown in Figure 3. It is a biometric fingerprint recognition device used for storing and comparing fingerprint patterns. It was used as a means of authentication where during registration; a voter's fingerprint was captured and stored in the database alongside his/her other details such as name, age, phone number and gender.

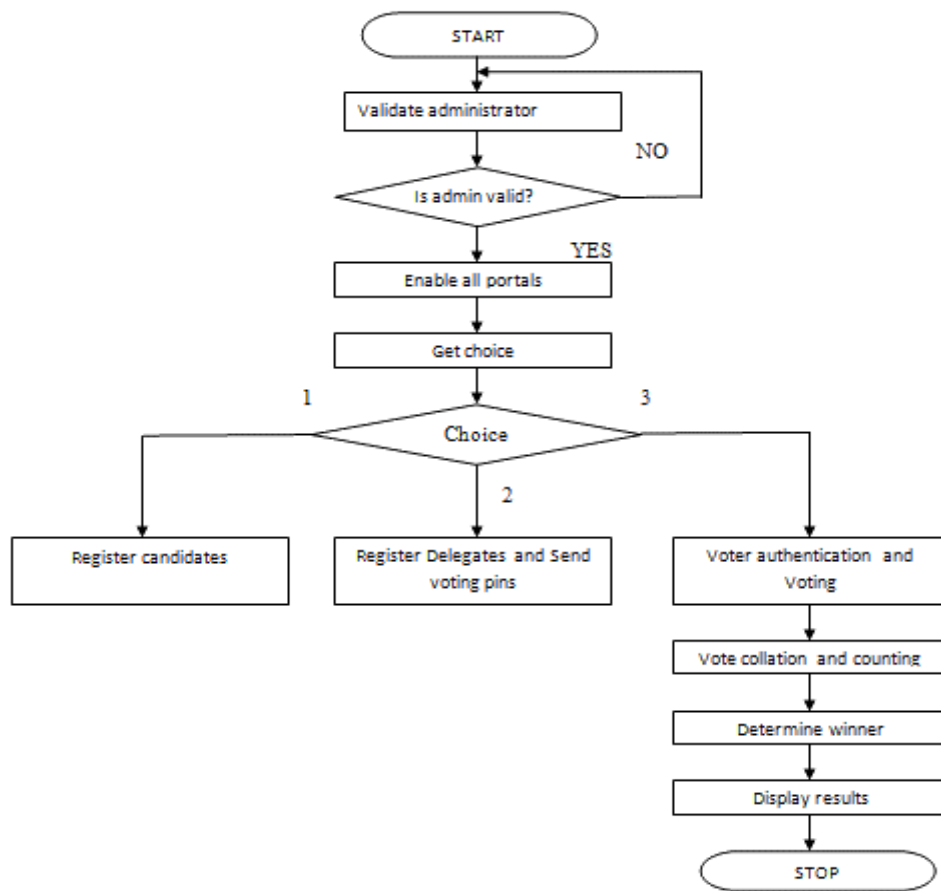


Fig.2.Flowchart diagram

It was interfaced with the Arduino in order to control the working of the whole device by merging the individual components and making decisions on when to use each. The fingerprint sensor also reads a voter's fingerprint pattern during election in order to authenticate them. During this stage, the fingerprint captured was compared to those in the database. It should be noted that depending on the number of voters, the match search may take different time, i.e. the more the longer. The match search was carried out by the main unit (Arduino) after receiving the pattern read

RESULT

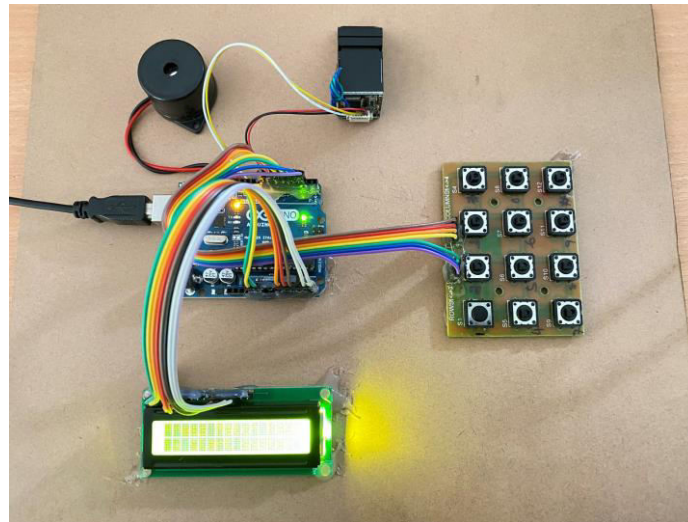


Figure represents the Electronic Voting Software which manages and maintains the voter's information and biometric data of the voters.

CONCLUSION AND FUTURE SCOPE

In our proposed work we have introduced some new concepts and that is to be implemented by Biometric Identifier. It reduces man power efficiently. Throughout the project, we have been able to develop an Electronic Voting Software which manages and maintains the voter's information and biometric data of the voters.

Finally, this voting software does the task of automating the collation of results in real-time that is as the election is being held. If given a second chance, the security features of this project would be greatly improved on, pertaining to both the hardware and the software. Due to the immense development of Aadhar card system it can be further improved by the addition of Iris recognition system for more secured polling.

REFERENCES

- [1] Balaji, Speech of Shri V S Sampath, CEC for Defence Estates Day Lecture 2014
- [2] R. Haenni, E. Dubuis, and U. Ultes-Nitsche, "Research on e-voting technologies." Bern University of Applied Sciences, Technical Report 5, 2008
- [3] G.V.L. N. Rao. Democracy at Risk! Citizens for Verifiability, Transparency & Accountability in Elections, New Delhi, Election Commission of India
- [5] A. K. Agarwala, D. T. Shahani, and P. V. Indiresan. Report of the expert committee for evaluation of the upgraded electronic voting machine (EVM). Sept. 2006
- [6] Wikipedia. Results of the 2009 Indian general election by parliamentary constituency Sanjay Kumar, Manpreet Singh, "Design Of A Secure Electronic Voting System Using Fingerprint Technique", IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 4, No 1, July 2013.