RESEARCH ARTICLE OPEN ACCESS

Bio-Metric Based Voting Machine

M.shanmugavalli[1] , K.Shyam sundar[2] S. Ruknudeen[3] R. Naga surya[4] , R. Sathish[5]

1(Asst Professor, Department of Instrumentation and Control engineering, Saranathan College of engineering)

2, 3, 4, 5 (UG Students, Department of Instrumentation and Control engineering, Saranathan College of engineering)

Abstract

Our main aim using this project is to improve the existing Indian voting system. By implementing the Bio-metric process in the voting system, we can make the polling process more secured and efficient than the existing one. With the help of the present voting system, one can easily poll the vote of the other person even without their knowledge. This may lead to a major democratic problem by ruling of a bad party. So using this Bio-metric system in the voting system, the process of polling will be more secured than the existing system. In this system no one can vote instead of others. Here all voter information was stored to register in this system. The Bio-metric recognition refers to the use of iris, fingerprint, face, palm and speech characteristics, called biometric identifiers. But here we use the fingerprint for the authentication purpose. Every person will be having unique fingerprint. So there will not be any kind of malpractice done while using this system.

Keywords: fingerprint voting system Arduino . Bio-metric voting machine

I. INTRODUCTION

Now-a-days, democracy has become an important part of people's lives. The heart of democracy is voting. The voting must be trust one and vote must be recorded and tallied with accuracy and impartiality. The major problem that we are trying to address here is the malpractice in the voting system. There are many loop holes in the current voting system in our nation. It results in the ruling of the nation by an inappropriate party. Is may cause a major problem in our nation. So using a secured voting system for the voting process will reduce such problems. We designed such a system to overcome this issue. It is a much needed system in current situation. This is achieved by using biometric system. An electronic voting system defines valid voting and gives a fast method of counting votes, which helps to yield a final result. Moreover electronic voting systems can improve voter identification process by using biometric recognition. Biometrics is becoming an essential personal identification solutions, since biometric identifiers cannot be misplaced and they represent an individual's identity. Fingerprint matching is a important for this process. It is an extremely difficult problem, due to variations in different impressions of the same finger. Fingerprints are unique to each individual and they do not change over time. When designing an electronic voting system, it is essential to consider ways in which the voting tasks can be performed electronically without sacrificing voter privacy or introducing opportunities for fraud. currently our nation suffers from a unsecured voting system.it needs a secured voting system which is free from all malpractice activities. The importance of our project is to eliminate the fake votes and to improve our voting system. we are using a current technology to make a secure voting process which will be more important for the socio-economic development.

II. LITERATURE REVIEW:

[1]Aadhar based EVM- Electronic Voting Machines ("EVM"), Idea mooted by the Chief Election Commissioner in 1977. The EVMs were devised and designed by Election Commission of India in collaboration with Bharat Electronics Limited (BEL), Bangalore and Electronics

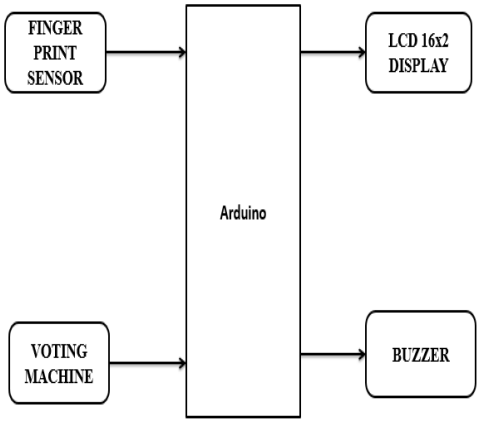
Corporation of India Limited (ECIL), Hyderabad. The EVMs are now manufactured by the above two undertakings. An EVM consists of two units, i) Control Unit ii) Balloting Unit The two units are joined by a five-meter cable. The Control Unit is with the Presiding Officer or a Polling Officer and the Balloting Unit is placed inside the voting compartment.

[2]Khasawneh, M., Malkawi, -:This project show that we can use a microprocessor to design an electronic voting machine with IOT, it is proposed to use Aadhar Card and Biometric means to conduct Elections in India. The main idea is to introduce the biometric voting system with the linkage of UID. Nowadays UID became inevitable and all the data of the people like finger prints are already collected at the time of enrolment. By using this database in the main server, with the help of IOT(Internet of Things), we can introduce this voting system at the booth level to ensure transparency in the polling process.

[3] Prasad, H. K., Halderman, A. J., &Gonggrijp, R., "Security Analysis of India's Electronic Voting Machines," . Technology is being used more and more as a tool to assist voters to cast their votes. To allow the exercise of this right, almost all voting systems around the world include the following steps: voter identification and authentication, voting and recording of votes cast, vote counting, publication of election results. Voter identification is required during two phases of the electoral process: first for voter registration in order to establish the right to vote and afterwards, at voting time, to allow a citizen to exercise their right to vote by verifying if the person satisfies all the requirements needed to vote (authentication). Security is a heart of e-voting process. Therefore the necessity of designing a secure e-voting system is very important. Usually, mechanisms that ensure the security and privacy of an election can be time consuming, expensive for election administrators, and inconvenient for voters. There are different levels of e-voting security. Therefore serious measures must be taken to keep it out of public domain. Also, security must be applied to hide votes from publicity. There is no measurement for acceptable security level, because the level depends on type of the information. An acceptable security level is always a compromise between usability and strength of security method.

[4]Bio-metric Electronic Voting System for Election Process"byRathnaPrabha.S . In which they came up with Direct Recording Electronic (DRE) voting system which are usually referred as Electronic Voting Machines or EVMs. 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. This made us to bring forth a system that is secure, transparent, reliable as well as easy to use for the citizens. In this project they proposed a mechanism to avoid fraudulence to make e-voting in India a reality. Thus it is concluded that the arduino controller could be interfaced in LabVIEW environment. The real time vote monitoring is made possible and finding of repeated voting by same voter could be detected.

III. BLOCK DIAGRAM:



This is the basic and simple block diagram that is easy to implement. Here we are using the arduino board for the interfacing purposes. By interfacing the fingerprint sensor with the arduino board we can implement the voting process securely. For a temporary purpose here we are using the push buttons. This is used instead of the voting machine, these push buttons will be used for the polling purposes. Every single push button is assigned for a individual party which is participating in the election. A voter can use the push button for the polling. And there will be a lcd display which is used for the displaying process. It is used to display the id of the voter and either the voter is permitted to vote or not. Then it will display the counts of the vote that has been polled and the final results will be displayed. Then to avoid the malpractice in the voting time we have been implemented a alarm system by using a buzzer. This buzzer will be making a alarm sound when there malpractice takes place. This system will help us to reduce the fake votes in the voting process.

IV. FINGERPRINT SENSOR:

Figure:1

Here we use the fingerprint sensor R307, which is the lastest and affordable one. The Fingerprint is one of the safest way to detect and identify the Authorized person, We know that fingerprint is unique even identical twins do not have identical fingerprints. By using this we can make pretty sure about security needs. This sensor is used to senses the fingerprint. It stores the fingerprint and senses those fingerprint when needed. The fingerprint identification process has two steps that is

1. Enrolling Fingerprint,

2. Matching Fingerprint

V. WORKING:

First we make an interfacing connection between the arduino board and the fingerprint sensor. Then there will be a parallel interfacing between arduino and buzzer, lcd display, push buttons.

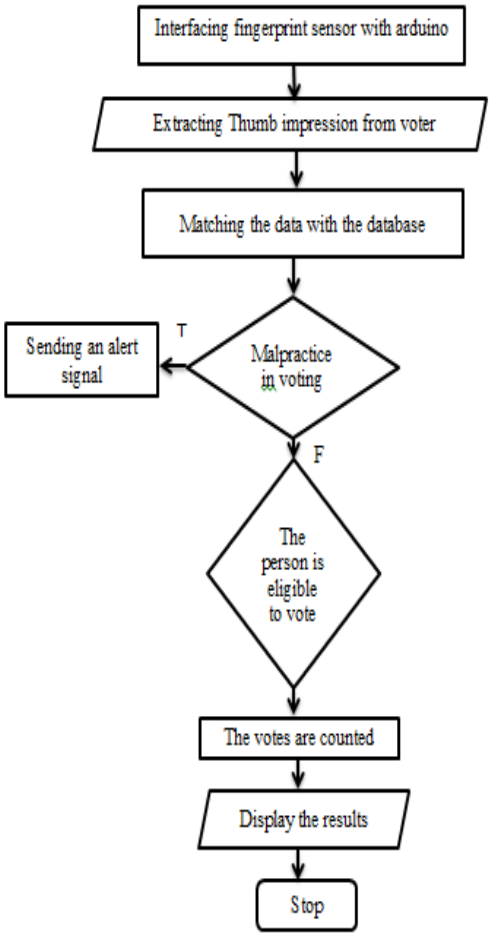


Figure:2

Then the fingerprints of the voters are get extracted and will be stored in the database. At the time of the election the voters will be placing the registered finger in the fingerprint sensor. Now the placed fingerprint will be checked with the existing database. Only the registered voter can be eligible to vote. The fingerprint which is not registered in the database will not be allowed to vote in the election process. In such case there will be a buzzer is installed to make alarm. This will make a notification when there a unregistered fingerprint or a fingerprint which is placed more than once get placed. This alarm system will be useful to find the malpractice action which takes place in the polling area.

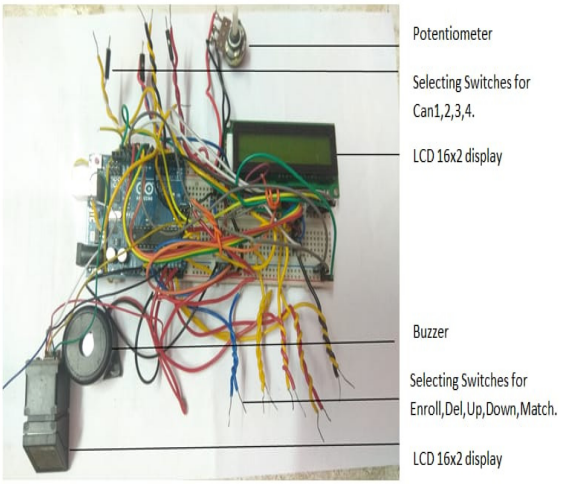


Figure:3

This is the circuit for our project which is used for the process of bio-metric based voting system. And this one will be simplified further when it comes to existence. It is a simple one that everyone can easily understand, so that the polling process and the counting will be easy.

VI. CONCLUSIONS

Hereby we conclude that by using this bio-metric voting system, there will be a secured polling process will be takes place. This may be implemented in future election processes. We do a betterment by interfacing the MyRIO kit with the fingerprint sensor. For this process we can use the labview software as a working platform.

.

VII. REFERENCESES:

[1] "Aadhar based Electronic Voting Machine using Arduino" by R.Murali Prasad , PolaiahBojja, MadhuNakirekanti in International Journal of Computer Applications on July 2016.

[2] Khasawneh, M., Malkawi, M., & Al-Jarrah, O., "A Biometric-Secure e-Voting System for Election Process," Proceeding of the 5th International Symposium on Mechatronics and its Applications (ISMA08), (2008), Amman, Jordan.

[3] Prasad, H. K., Halderman, A. J., &Gonggrijp, R., "Security Analysis of India's Electronic Voting Machines," International Journal For Research In Emerging Science And Technology, Volume-2, Issue-3, E-Issn: 2349-7610, March-2015.

[4] Bio-metric Electronic Voting System for Election Process"byRathnaPrabha.S et al[2] (2016).

[5] Q. UIDAI., "Role of Biometric Technology," Aadhaar Authentication, (2012).

[6] Yinyeh, M. O., &Gbolagade, K. A., "Overview of Biometric Electronic Voting System," International Journal of Advanced Research in Computer Science and Software Engineering, (2013).

[7] McGaley., Margaret., "Irish Citizens for Trustworthy Voting," 6 July 2004.

[8] UIDAI, "Biometrics Design Standards For UID Applications," 2009.

[9] IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 4, No 1, July 2013ISSN (Print): 1694-0814 | ISSN (Online): 1694-0784www.IJCSI.org

[10] "Bio-metric Electronic Voting System for Election Process" by RathnaPrabha.S, TriniXavier.X, Deepika.V , Iswarya.C in International Journal Of Innovative Research In Electrical, Electronics, Instrumentation And Control Engineering on January 2016.

[11] "Aadhar Based Electronic Voting System And Providing Authentication" by D.Krishna , T.Hemalatha, G.Dhana Mani Shankar, K.Bala Krishna, V.BalaSubhramanyam in International Journal of Engineering Science & Advanced Technology on March 2016.

[12] "Biometric Secured Voting Machine to Avoid Bogus Voting Based on Aadhar Card" by Umang Shah, Trupt Shah, MarteenKansagara, SaagarDaxini in International Journal of Innovative Research in Computer and

Communication Engineering a Vol. 3, Issue 3, March 2015

[13] "Design A Secure Electronic Voting System Using Fingerprint Technique" by Sanjay Kumar, Manpreet Singh in IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 4, No 1, July 2013

.

[14] "Electronic Voting Machine Using Zigbee" by JagritiKumari, Sabi Pal, Arthi R, Prawin Angel Michael in IJRET: International Journal of Research in Engineering and Technology eISSN: 2319-1163 | pISSN: 2321-7308.