International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 06 Issue: 03 | Mar 2019 www.irjet.net p-ISSN: 2395-0072

SAFE AND SECURE SMART ELECTRONIC VOTING MACHINE USING BIOMETRIC

Ganapathi T[1], Sathishkumar D[2]

1 Student, Department of ECE, IFET college of Engineering , Gengarampalayam , Villupuram -605 108

2 Assistant professor, Department of ECE, IFET college of Engineering , Gengarampalayam , Villupuram -605 108

Abstract *- voting is the most important process which is used to express the peoples opinion in order to select their favorite candidate or an government .In past years, the paper based voting are used. But it can be replaced by electronic voting machine due to increased technology and security .This project is used to provide easy and more secured election process using biometric and face recognition. More commonly the biometric is secure than any password or ID. But recent times, there is many chances to create fake finger prints as like original one.To overcome this problem, face recognition sensor can be used next to the step of fingerprint identification. The voter's face detected and stored in the database to recognize the person. If the match occurs ,then the person is allowed to caste their votes only once.This provide security against duplicate vote and fraudulent*

Index terms-biometric, finger print, face recognition(keywords)

1. Introduction:

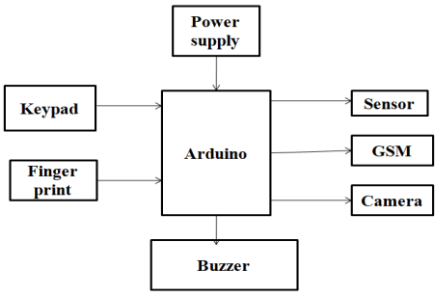
The famous quotes says that **"people never lie so much as after a hunt ,during a war or before an election"**. The election plays a important role in choosing the appropriate leader who has capable to impact the whole nation. Being the largest democracy in the world, India has become a role model to other countries. There are so many problems occurred in the conduction of voting process. The majority of the voting system around the world consists of following steps. They are Aadhaar identification, voter id identification, authentication, face monitoring, publication of election result.

2. Electronic Voting:

Electronic voting machine are used in the elections of Indian general and state election. There are many claims regarding EVM's temp arability and security which has not proved.EVM consists of two units such as control unit and balloting unit. This can be joined by five meter cable. The balloting unit facilitates the voting by a voter via labeled button and the control unit controls the ballot units. It stores the voting counts and results are displayed in seven segment display. The EVM can record maximum votes of 3840. When the particular button on the balloting unit is pressed, the vote is recorded for certain candidates, and the machine gets locked. Even if one presses that button further or any other more button, no further votes will be recorded. So the EVM for "one person , one vote".

3. Architecture of proposed system:

In this proposed system, fully advanced and secured voting technology is used. The hardware module consists of Aruino, buzzer, finger print sensor, Web cam etc., The proposed system ensures the authentication of an individual by face recognition in addition to finger prints. The camera monitor every individual whom are all enter and exit in the election booth in-order to avoid the illegal activities.Next to the step of finger print verification, face recognition is used to provide the extra secure in case ,somebody involve fraudulent vote by chances of using fake finger prints. The schematic building block which composes the design is shown below:



3.1 Block diagram

4.Hardware requirements

4.1 Arduino/Genuino Uno

The digital and analog input or output pins equipped in this board is interfaced to various expansion boards and some other circuits. It is based on a removable type dual-inline-package (DIP) ATmega328 AVR microcontroller. Program can be loaded very easily. It has large set of community and extensive set of support libraries.

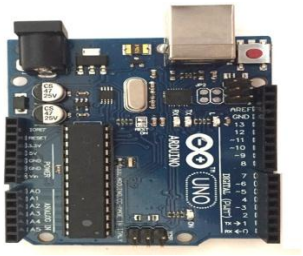


Fig 4.1 Arduino Uno

4.2 Finger Print Sensor R305:

The working of this module includes procedures like finger print enrolling, processing of image, comparison of finger print, generating reports. one high powered Digital Signal Processing chip is presented in this module. It accommodates procedures like Image rendering, Calculation, Feature-Finding and Searching. It has high reliable capability . It send data packets to take photos, detect prints and search. It can be used to enroll new fingers up to 162 fingerprints. It consists of red or green LED in the lens that lights up only at the time of scanning process.

Fig 4.2 Sensor

4.3 LCD Display (16*2)

LCD is used to display the limited set of output statements. At present we widely use 16*2(4-bit communication) and 16*4(8-bit communication). 16 letter spaces with 2 lines and 16 letter spaces with 4 lines are visual representation of LCD. Various devices and circuits use this type of display. It has no limitation of displaying special &

even custom characters. 5x7 pixel matrix is used to display each character in this LCD.

Fig 4.3 LCD display

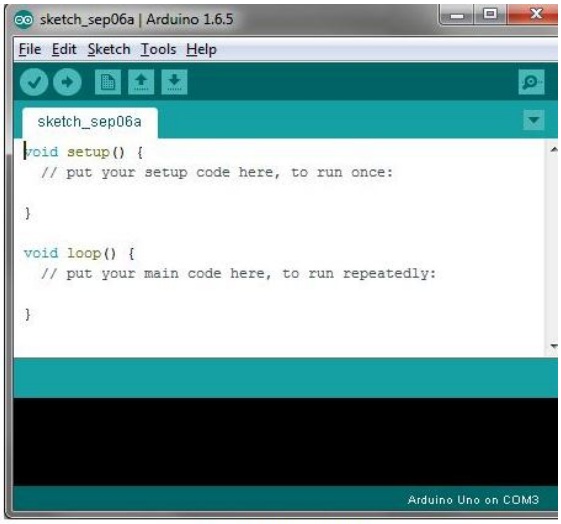
4.3 Web cam

It is used for face recognition.The camera monitor every individual whom are all enter and exit in the election booth in-order to avoid the illegal activities .Reliability and Security is its key feature.

5.Software requirement:

5.1 Arduino IDE software:

IDE is abbreviated as Integrated development environment. Arduino IDE software is used to write and upload, run programs on Arduino board. It supports c , c++ and python languages using code structuring special rules. It is used to convert the executable code into a text file in hexadecimal encoding . Once the arduino IDE opened,it seems blank sketch where we can program instantly. Then, we configure the board and port settings to allow us to upload the code. Finally, connect the arduino board with PC via USB cable.



Arduino IDE Default Window

5.2 Python software

Python software is an high-level programming language. It is open source software and it is free to use. It is designed to be easy to read and simple to implement. Python run on Mac, Windows, and Unix systems .It is used for creating web application and dynamic web content. PY files are written python scripts and it can be parsed, run immediately. It can be saved as compile programs as .PYC files

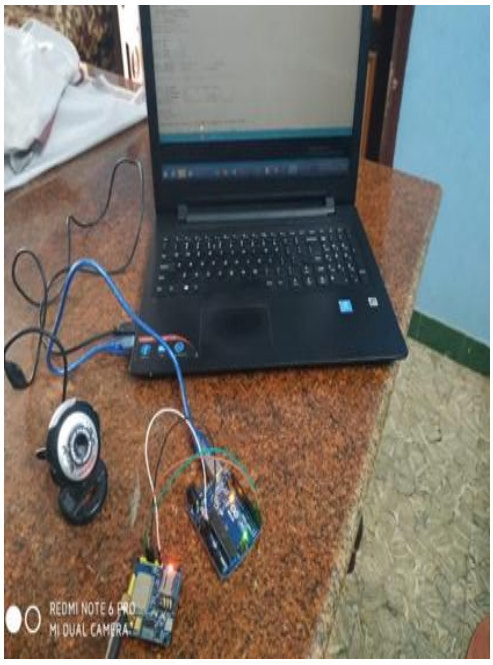


Fig 5.2

6. ADVANTAGES AND FUTURE SCOPES:

- It cannot provide any chance to put illegal vote.
- It provides the preventive measures for voting.
- It reduces the time of polling.
- It can provide easy and accurate counting without any troubles in counting centers.
- It provides more safe and secure.

Conclusion:

This paper proves the fact that finger print recognition resemble as more secure and web cam provide extra security. This system is more secure, efficient and accurate.

References

[1] B. Madan Mohan Reddy, D. Srihari, (April 2015), RFID Based Biometric Voting Machine Linked to Aadhaar for Safe and Secure Voting.

[2] Sahibzada Muhammad Ali, Chaudhary Arshad Mehmood, Ahsan Khawja, Rahat Nasim, Muhammad Jawad,Saeeda Usman, Sikandar Khan, Saqib Salahuddin, Mian Atif Ihsan. "Micro Controller Based Smart Electronic Voting Machine System"2014 IEEE.

[3]Shafi'í Muhammad Abdulhamid, Damian Oshomah Ugiomoh, Mohammed Danlami Abdul Malik, (May 2013), The Design and Development of Real-Time E-Voting System in Nigeria with Emphasis on Security and Result Veracity.

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

[5] N.Ansari, P. Sakarindr, E. Haghani, C. Zhang, A.K. Jain, and Y.Q.Shi, "Evaluating electronicvoting systems equipped with voter verified paper records" , IEEE Security and Privacy, vol. 6, no.3, May 2008.