BIOMETRIC FINGERPRINT BASED SELF-AUTHENTIFICATION PROTECTED VOTING MACHINE

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Abstract

Fingerprint Voting System was implemented with the Arduino technology. In this System a voter can poll his vote easily. In this database server all voters fingerprint information was stored to register in this system, the voter should scan the fingerprint during the poll time. This fingerprint information will be checked by the database server. Because all the fingerprint information about the voter would be already exist in the database, there is anything wrong, the system will not allow the voter to poll his or her vote. This system is helpful to avoiding the misuse of others vote. It is more Secured way. Fingerprint is an important identity of the user. Fingerprint Voting System is user-friendly. It has simple architecture, responses very quickly manner, Easy to carrying to polling center from the polling box, It provide easy and accurate counting without any troubles.

Keywords:- *Fingerprint sensor, arduino uno, LCD display, Indicators*

1.INTRODUCTION

Elections were a defining feature of democratic government, an electoral system is the set of rules that determines how elections and referendums were conducted and how their results were determined. Political electoral systems were organized by governments, while non-political elections may take place in business, non-profit organizations and informal organizations. There were so many electoral systems in world. That was paper ballots, punch cards and Optical Mark Sense Ballots. Some electoral systems elect a single winner to a unique position, such as prime minister, president or governor, while others elect multiple winners, such as members of parliament or boards of directors. The fingerprint voting system is an electronic voting machine using human biometric system. It's reducing the staff and polling time from paper voting system. In all the country votes were decided the feature. For that, we were introducing the new method of voting system to increase the standard of living.

According to the current system, votes could be counted manually so that there is more opportunity for occurring error, such as duplicates counting and completely missed counting Sometimes votes were even manipulated and motivate by political parties which lead to inaccurate vote and it will distort the results of an election in favour of certain candidates. This device can be useful for easy to handle, reliability and accurate. Vote counting is one of the vital activities in the election process. Failure to complete the count could lead to impact on people attitude towards the current government so that the election counting should be transparent, accurate and reliable then only public will feel confidence in the elections each polling station has a list of all voters assigned to the station and only those listed may vote in that Polling station.

2.HARDWARE DESCRIPTION

2.1. Arduino Uno

The Arduino UNO is a widely used open-source microcontroller board based on the ATmeg328Pmicrocontroller and developed by Arduino.cc the board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. The board features 14 Digital pins and 6 Analog pins.It is programmable with the Arduino IDE(Integrated Development Environment) via a type B USB cable. It can be powered by a USB cable or by an external 9 volt battery, though it accepts voltages between 7 and 20 volts.

2.2. ARDUINO NANO

Arduinonano differ from other Arduino as it very small so it suitable for small sized projects and it supports breadboards so it can be plugged with other components in only one breadboard.Microcontroller InArduino Nano 2.x version, still used ATmega168 microcontroller while the Arduino Nano 3.x version already used ATmega328 microcontroller.

2.3 FINGERPRINT SENSOR

This is a fingure print sensor module with TTL UART interface for direct connections to microcontroller UART or to PC through MAX232 / USB-Serial adapter. The user can store the finger print data in the module and can configure it in 1:1 or 1: N mode for identifying the person.The FP module can directly interface with 3v3 or 5v Microcontroller. A level converter (like MAX232) is required for interfacing with PC serial port.Optical biometric fingerprint reader with great features and can be embedded into a variety of end products, such as: access control, attendance, safety deposit box, car door locks.

2.4 DISPLAY

LCD (Liquid Crystal Display) screen is an electronic display module and find a wide range of applications. A 16x2 LCD display is very basic module and is very commonly used in various devices and circuits. These modules are preferred over seven segments and other multi segment LEDs. The reasons being: LCDs are economical; easily programmable; have no limitation of displaying special & even custom characters (unlike in seven segments), animations and so on.A 16x2 LCD means it can display 16 characters per line and there are 2 such lines. In this LCD each character is displayed in 5x7 pixel matrix. This LCD has two registers, namely, Command and Data.The command register stores the command instructions given to the LCD. A command is an instruction given to LCD to do a predefined task like initializing it, clearing its screen, setting the cursor position, controlling display etc. The data register stores the data to be displayed on the LCD. The data is the ASCII value of the character to be displayed on the LCD. Click to learn more about internal structure of a LCD.

2.5 BREAD BOARD

A breadboard is used to make up temporary circuits for testing or to try out an idea. No soldering is required so it is easy to change connections and replace components. Parts will not be damaged so they will be available for re-use afterwards.

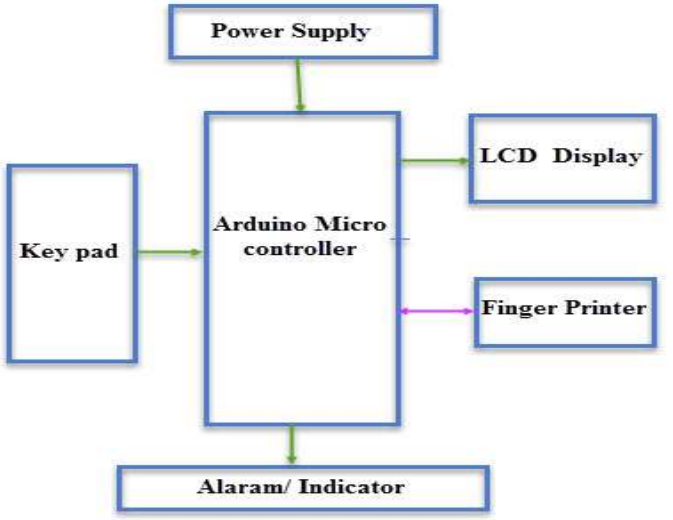
3.BLOCK DIAGRAM

Battery: 12v and 5v dc power supply.

Arduino UNO: Microcontroller.

Input devices: Rain sensor, LDR module.

Output devices: Motor, Head light.



4.WORKING PRINCIPLE

The model consists of a acts as the database for the details of the voter and to store the vote counts. An ArduinoUno 3 is used to send and receive the data. Oncethe user placeshis RFID card, the Arduinochecks with the database for the details of thevoter. If the voter's card matches with the datastored in the database, the LCD display requeststhe user for their fingerprint and compares thefingerprint of the voter with the same stored inthe database..Once the identity of the voter isconfirmed the machine requests the voter to vote.The list of candidates is displayed in LCDdisplays and push buttons and LEDs are placednear each candidate. A buzzer is placed toconfirm the pressing of the push button. Whenthe voter presses the button corresponding to hischoice of candidate by pressing the push buttonnearby, the LED glows along with a buzzersound, indicating to the voter that their vote hasbeen registered. The vote count of the selectedcandidate is incremented in the Arduino.If the voter who has already voted tries to voteagain, the machine displays the message“ALREADY VOTED”.If a person who is not registered places his finger, the machine displays the message"PERSON NOT FOUND" Here the Arduino acts as themaster to two Arduinos and sends commands. A second Arduino Uno is used to interface the RFID reader with the system and to increase thespeed of the system. This is the workingmechanism of Aadhar based Electronic Voting Machine.

5.PHOTOGRAPH

Figure 1 Experimental setup

6.CONCLUSION

The overall review about Aadhar based electronic votingmachine is that it provides full security authenticationbecause finger print of one does not matches with otherperson. As it is a biometric way of checking the database ofsaved fingerprints. This is also a Time saving process withinstant result announcing way of method which will hardlytake less than a minute. The proposed method drasticallyreducing the voting time and saving moneyas itisusingveryless staff to conduct the voting. It is also an environmentalfriendly method that it is using lee number of papers. It isalso reducing the voterȝstime as well as the governmenteffort in conducting the result.

7.REFERENCES

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