

USER FRIENDLY AADHAR BASED ELECTRONIC VOTING MACHINE USING ARM7

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Abstract— Today we all know that bogus (fake) voting is still a major drawback in the elections. We can switch over from ballot paper to electronic voting machine (EVM), but this problem cannot be avoided completely. This paper will attempt to solve this problem. Today we all have AADHAR CARD so the government has all the database of all the users including fingerprint. So, if we use the database effectively with the help of Micro-Controller then we can completely overcome the problem of bogus voting. This paper shows how this problem can be solved with the help of finger print scanner and Micro-controller which will be convenient for every citizen at the polling booth. For these Finger Print proves to be one of the best method. As we are discussing about Biometrics we need Fingerprint scanner. When coming to the implementation of citizens have to place their finger in finger print sensor. When it is matched with the stored finger prints and then we can go to the voting process. Super-visor can know the details of voting and a GSM modem is interfaced to send SMS to the corresponding authority.

Keywords— ARM7 Micro-Controller, Finger Print Sensor, GSM Module, LCD Screen, Keil Software.

I.INTRODUCTION

The objective of voting is to allow voters express their choice for electing the government and their representatives. As we all know that security is required for the voting process. Therefore we have designed the e-voting using fingerprint. Normally the voting process will be done using the EVM's. Here the voter has to produce their election identity card and the polling officer will check with the official list. Now, they have to confirm whether it is an authorized identity card or not which a time consuming process is.

Thus, to avoid this problem we have designed the fingerprint based voting system where the individuals need not carry their voter card every time. Now the person who goes to the booth should scan the fingerprint. This module has in-built ROM, DSP and RAM which has high voltage module. It can operate in 2 modes. First mode is used to register the fingerprints and When this module is interfaced to the microcontroller, we will be using it in user mode. This scanner is interfaced to LPC2148 micro-controller. By using this controller we will control the scanning process. After the scanning has been completed the result is stored in the micro-controller. By simply pressing a switch we can get the details of the polling. If this fingerprint is matched with the already existing data,

then the person is allowed to cast the vote. Switches are available in order to poll the vote. All the process will be displayed on the LCD screen. A GSM Modem is also interfaced to send the sms to supervisor.

This project uses regulated 3.3V,500mA power supply.7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12v step down transformer.

II.EXISTING SYSTEM

In present voting system we have electronic voting machine (EVM) which consists of control unit and ballot unit. These two units are connected by a five meter cable. The control Unit is located with the Polling Officer and the Balloting Unit is located inside the voting place. Now the voter should carry his voter id card to the particular polling booth and the polling officer will check all the details of it with the list he has. In the balloting unit we have blue buttons which are labeled horizontally corresponding to party symbol and candidate's name. This will allow the voter to cast his vote by pressing the blue button on the Voting Unit to his favorite candidate which is a time consuming process.

III.PROPOSED SYSTEM

In the proposed system, finger-print sensor based authentication is used to enhance security. During enrollment phase, the fingerprints are taken and stored in the EEPROM memory. During the voting process, the voter places the finger on finger print sensor. When the fingerprint is matched with that of the database and checks its authentication. If the fingerprint is not matched or if the voter has already voted, then he/she is not allowed to vote. In this way the authentication process goes on, unauthorized voters and second time voting is not allowed is eliminated and thus the security will be established. If the voter finger print is matched for the first time and has registered, then the list of parties names is displayed on LCD through which he/she can cast his vote through push buttons. A message will be send to the corresponding authority like voting is completed successfully or access is denied or user identification failed. The final polling result can be viewed by the supervisor.

A. BLOCK DIAGRAM

The hardware block diagram is as shown in figure 1

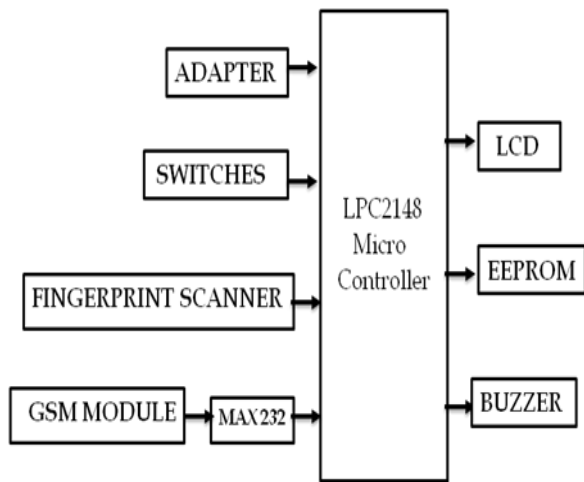


Figure.1. Block diagram for user friendly Aadhar based electronic voting machine using arm7

B. FINGER PRINT SCANNER



Fingerprint scanners are security systems of bio-metrics. They are now used in police stations, security industries and most recently, on computers. Everyone has marks on their fingers. They cannot be removed or changed. These marks have a pattern and this pattern is called the fingerprint. Every fingerprint is special, and different from any other in the world. Because there are countless combinations, fingerprints have become an ideal means of identification.

C. GLOBAL SYSTEM FOR MOBILE

Global System for Mobile (GSM) is a second generation cellular standard developed to cater voice services and data delivery using digital modulation and used to send the message.

D. PRINCIPLE OF WORKING

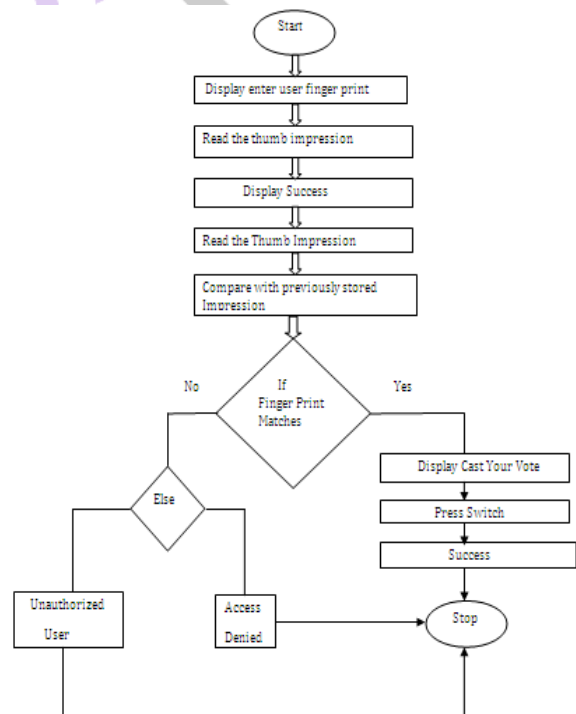
The microcontroller which we are using in our project will take only 3.3v of power supply as it is low power consumption. After switching the power supply we have to press the rest buttons. Now our first mode is to register the fingerprints, so we have to keep our finger on the fingerprint module where it scans our image and saves it with a unique id number. From microcontroller we have to give connections to the LCD display in order to show the process of voting.

Switches are also connected to the microcontroller where we have 8 switches. In which four switches are used for different parties and other four are used for supervisor, polling officer, identification and enrollment.

During the voting each person will place the finger on the module and it will scan the fingerprint. If the fingerprint is matched with the stored data then the voter will be allowed to cast the vote. After that he/she can put his valuable vote to his favorite candidate and a message will be received by the supervisor that the vote is casted. In case the fingerprint is not matched then the respective voter is said to be a proxy voter and the candidate is not allowed to vote. After this supervisor will receive a message that user identification failed. If the candidate tries to vote again then a message will be sent that access is denied. After completion of voting the results will be seen by the supervisor.

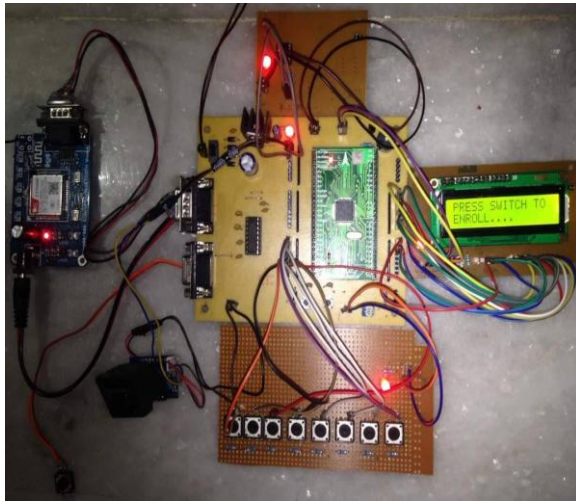
The messages will be sent to the supervisor by using GSM modem which is connected to the microcontroller. MAX 232 is used in between micro controller and GSM in order to communicate serially.

E. FLOW CHART



IV. RESULT

After verification of fingerprint the list of candidates with their party symbol is displayed then the voters are allowed to select the candidate of their wish and cast their vote the acknowledgment of vote is displayed in the LCD and a message will be sent to corresponding authority.



V.CONCLUSION

In this paper we have proposed safe and secure voting system which is better than the previous system. This system will prevent the access of illegal voters and it will get faster results, greater accuracy. It also checks the eligibility of the voter and also prevent the same person to vote multiple times. It allows the person to vote from anywhere.

VI.FUTURE SCOPE

As if now we are using the finger print, but in future we can implement it using iris technology.

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