International Journal Of Advanced Research In Engineering Technology & Sciences
ISSN: 2394-2819
Email: editor@ijarets.org March- 2015 Volume 2, Issue-3 www.ijarets.org

Fingerprint Recoginisation Based Electronic Voting Machine

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ABSTRACT-:
As we know India is a democratic country and every person has a Right to vote and the main objective of voting is to allow every person to express their choice and to raise his voice regarding social and personal issues, legislative issues, and political issues. Now to conduct elections, it has always been a difficult task for the election commission to conduct fair and free election. But a lot of money is spent on the elections so that it can be made fair. So to provide government a solution, the above project is implemented with a fingerprint scanner i.e. biometric system. This project provides security, accuracy, speed and rampage free voting etc. Now this system uses thumb impression of the voter and as we know thumb impression of every voter has a unique pattern. Thus it would have an advantage over the present manual voting systems. In this project, first of all we will create a database of thumb impressions of all the eligible voters present in a constituency and this database will be entered as an input to the system. During elections, the thumb impression of a voter is given input to the system and the input is compared to the preinstalled database. If the thumb impression matches with any of the available records in the database, the voter is eligible to cast a vote. but in case the thumb impression is unable to match or in case of repetition the voter is not eligible to cast a vote i.e. Access id denied and the vote gets rejected. This provides a secure, fast and reliable system to cast votes and result is instantaneous and counting of votes is also done.

Keywords: microcontroller,LCD,power supply,fingerprint module,infrared sensor

I. INTRODUCTION

In this project we demonstrate the idea of advance voting machine using biometric system. biometric system is a advance technology of measuring and analyzing human body characteristics such as Fingerprint scanning. Apart from this eye retina, voice pattern and even DNA is used in many places for the above purpose for identification and authentication. Since every individual has a unique and personalized thumb impression so this technique is quite effective.

To achieve maximum accuracy and significance of the purpose an initial database is created of all the individuals of the constituency. Nuisance voting and repeating the already added database votes can be checked. So with the help of this technique fair and correct elections can be conducted thus making it a simple and easy process unlike the previous methods. Thus this project is of grave special use to both the students, office workers and even the election process officers .3 modes can be considered in this process that is data base mode (which we are employing) , vote casting mode (which checks the validity of 1 time or not) and the checking mode (of total and Party vote).

II. SHORTCOMINGS IN PREVIOUS VOTING SYSTEMS

In today's democratic world the elections are the defining features of the government. Actual voting process is quite complex in a way and we often blame the election commission of the shortcomings in this process but the real way should be understood by us. In 1977 the First concept of an voting machine to be used was introduced by the chief election officer T.N. Sheehan. Along with the help of an electronics company leading at that time,

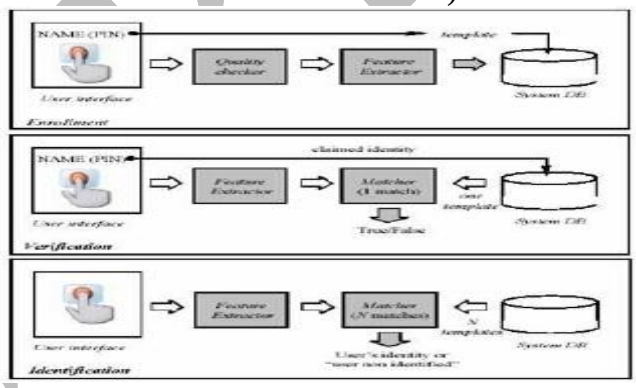
BEL which was bharat electronics limited and the electronics corporation of India limited in Hyderabad the first electronic voting machine was designed and devised.
We face the following 2 problems in the previous versions of voting systems:

1. Security issues:
   if the program installed in the voting machine is changed then the result can be changed according to a particular 'wish. Hence this issue is very important and has to be taken proper cared off because illegal voting and unfair counting can lead to a lot of loss to the society.

2. Illegal voting or rigging
   Sometimes a single person can cast the votes for other members illegally which can result in illegal voting and loss to the society thus presenting and unfair system

REMEDIES:
This above problems can be solved by keeping the electronic voting machines safe and secure. If we use the jammers at the ballot starting to avoid this dishonest by cell phones. And results should be declared sooner than the poling gets over. Thus by giving the uniqueness and identity to the individual we can identify the problem and correct it.

III. BIOMETRIC SYSTEM (FINGERPRINT RECOGNITION)



This is the block diagram of the enrollment, verification and identification systems are depicted.4 modules are used in this biometric system.

1. Sensor module : captures the biometric data of an individual.
2. Feature extraction module : in which acquired biometric is processed the features.
3. Matcher module : features extracted are compared against the originally stored templates.
4. System database modules : for all the real and original users the templates are stored in the biometric system. Data captured is supervised by an application or even by user defined data. The input digital data is processed as template which is stored in central database. But even the biometric system might generate some errorss.

2 Types of errors can occur:

1. Mistaking biometric measurement from 2 different individuals acting as a singular unit can be avoided.
2. False reject error in which same vote is cast again and again.

IV. ARCHITECTURE OF THE PROPOSED SYSTEM

Components are as following :

1. Microcontroller
2. Fingerprint identification module
3. LCD
4. Power supply
5. Infra red sensor

1. ATMEL MICROCONTROLLER

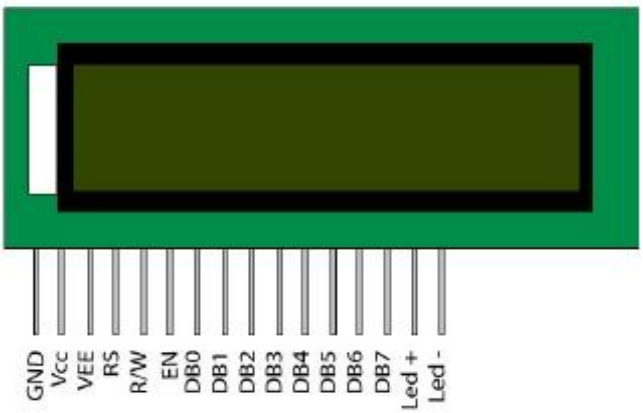
At89s52 is a cmos flash based high performance 8 bit cisc microcontroller. A 256 bytes of EPROM data memory, 2 comparators,8 channel of 10 bit a/d converters and 2 pwm , a usart is also used.

2. FINGERPRINT IDENTIFICATION MODULE

It includes fingerprint enrollment and then further matching it to the original data base.

3. LCD

It is a flat panel display that uses properties of liquid display. They are energy efficient and low electrical power consumption. It is an electronically modulated optical device..



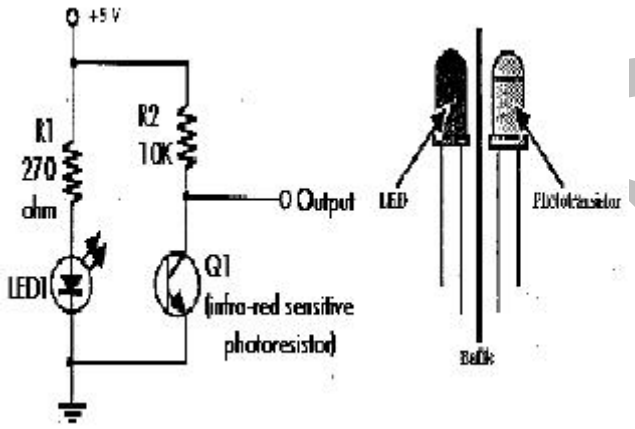
Colors used are grey, yellow, and green with different size LCDs.

4. POWER SUPPLY

It consists of step-down transformer, rectifier unit, input filter, regulator unit and output filter.

5. INFRARED SENSOR

The IR sensor set consists of an infrared transmitter and receiver.



ADVANTAGES

1. It is reliable, tamper proof and secure
2. Cost is less
3. Rigging can be curbed down
4, results can be fast and high accuracy is high
5. Can be used both in sssgovt and private sector.

FUTURE SCOPE

1. It is not expensive and compatible so in future years this method can be used.
2. Memory can be expanded according to our use
3. Even external memory can be applied
4. For illiterate users even the audio output can be used.

CONCLUSION

Earlier years too fingerprints acted as most important method for recognition and originality checking of the individuals. And results obtained were significant and comparable.

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