Development Of Antirigging Voting System Using Biometrics Based On Adharcard Numbering

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Abstract: Now a days voting process is exercised by using EVM(Electronic voting machine). In this paper we present and use implementation is to implement the development of anti rigging voting system using finger print .The purpose of the project and implementation is to provide a secured and reliable environment to the customers is to electing the candidates by using the intelligent electronic voting machine by providing a unique identity to every user using the FINGER PRINT identification technology. Here in this project and implementation we are going provide the at most security since it is taking the FINGER PRINTS as the authentication for EVM. Intelligent EVM is an Embedded based project and implementation. It involves microcontroller and interfaces. Intelligent EVM has been specially designed to collect, record, store, count and display cent percent accurately. It has got two units control unit and ballot unit. It has "DISPLAY" section that will display the number of votes to respective candidate at the end of the poll.
Keywords- FINGERPRINTMODULE,EEPROM ,MAX232

I. Introduction

In present days, computer becomes a main part of human beings for storing information. This information is up to some extent is a secured one. For example the details of employees and student etc... The authority person may only change the details. For this protection we are going to provide a PASSWORD for the PCs. This is secure up to some extent only because there may be a chance of revealing the password or some times the authorized person may forgot the password. So we have to provide security for PCs with a unique and simple to remember identification. One of such identification is the FINGER PRINT.Fingerprint Scanner is a device for computer Security featuring superior performance, accuracy, durability based on unique NITGEN Fingerprint Biometric Technology. Fingerprint Scanner can be plugged into a computer separately with your mouse. Fingerprint Scanner is very safe and convenient device for security instead of password that is vulnerable to fraud and is hard to remember.

II.Issues Of Existing Voting System

Elections are a defining feature of democratic government, but all too frequently, we take the actual mechanics of the election for granted. We speak at length of such issues as who is allowed to vote, how campaigns are conducted, and how they are financed, but no one gives priority to the understanding of the actual voting process. 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.

Fig: Electronic voting machine

There are two types of problems with EVM which is currently in use :

1. Security Problems - One can change the program installed in the EVM and tamper the results after the polling. By replacing a small part of the machine with a look-alike component that can be silently instructed to steal a percentage of the votes in favor of a chosen candidate. These instructions can be sent wirelessly from a mobile phone.

2. *Illegal Voting (Rigging)* - The very commonly known problem, Rigging which is faced in every electoral procedure. One candidate, casts the votes of all the members or few amount of members in the electoral list illegally. This results in the loss of votes for the other candidates participating and also increases the number votes to the candidate who performs this action. This can be done externally at the time of voting.

III.Bioemtric System (Fingerprint Recognition)

The analysis of fingerprints for matching purposes generally requires the comparison of several features of the print pattern. These include patterns, which are aggregate characteristics of ridges, and minutia points, which are unique features found within the patterns.[1] It is also necessary to know the structure and properties of human skin in order to successfully employ some of the imaging technologies.

Patterns

The three basic patterns of fingerprint ridges are the arch, loop, and whorl:

- arch: The ridges enter from one side of the finger, rise in the center forming an arc, and then exit the other side of the finger.
- loop: The ridges enter from one side of a finger, form a curve, and then exit on that same side.
- whorl: Ridges form circularly around a central point on the finger.
- Scientists have found that family members often share the same general fingerprint patterns, leading to the belief that these patterns are.
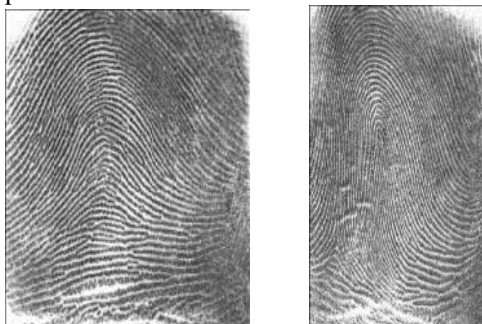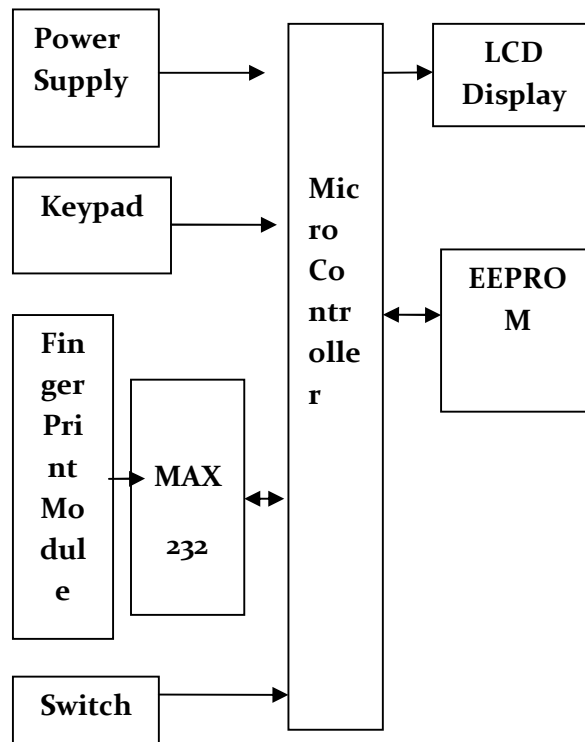
Fig:The arch pattern   Fig:The loop pattern.

### I.   Architecture of the system

The block diagram of anti rigging voting system is as follows


II.   MODULES USED

Microcontroller Used

The most widely used ARM7 designs implement the ARMv4T architecture, but some implement ARMv3 or ARMv5TEJ. All these designs use a Von Neumann architecture, thus the few versions comprising a cache do not separate data and instruction caches.Some ARM7 cores are obsolete. One historically significant model, the **ARM7DI**[1] is notable for having introduced JTAG based on-chip debugging; the preceding ARM6 cores did not support it. The "D" represented a JTAG TAP for debugging; the "I" denoted an ICEBreaker debug module supporting hardware breakpoints and watchpoints, and letting the system be stalled for debugging. Subsequent cores included and enhanced this support.It is a versatile processor designed for mobile devices and other low power electronics. This processor architecture is capable of up to 130 MIPS on a typical 0.13 µm process. TheARM7TDMI processor core implements ARM architecture **v4T**. The processor supports both 32-bit and 16-bit instructions via the ARM and Thumb instruction sets.
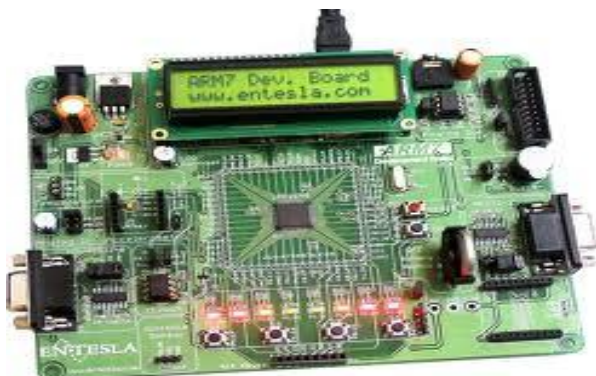
The pin diagram of ARM7 is as follows
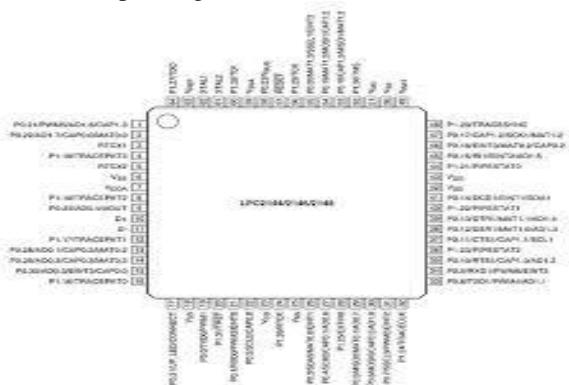
A. Fingerprint Module R305

R305 Fingerprint Module is a serial fingerprint scanner which can be directly connected to the PC's com port. R305 Fingerprint Sensor can easily be connected to any controller via MAX232 IC. This Fingerprint scanner is capable of storing and comparing the fingerprint and accordingly giving the desired output.Fingerprint processing includes two parts: fingerprint enrollment and fingerprint matching (the matching can be 1:1 or 1: N). When enrolling, user needs to enter the finger two times. The system will process the two time finger images, generate a template of the finger based on processing results and store the template. When matching, user enters the finger through optical sensor and system will generate a template of the finger and compare it with templates of the finger library. matching finger. In both circumstances, system will return the matching result, success or failure.

Features:

- Basic Power: 8-12v AC/DC
- Interface: RS232.
- Matching Mode: 1:1 and 1:N

Baud rate: 9600 – 115200. Default: 57600.
Storage Capacity: 256.

- Average Search Time: <1sec

- Image Acquire Time: <0.5sec

Fig: Finger print module

B. LCD DISPLAY

A **liquid crystal display** is a special thin flat panel that can let light go through it, or can block the light. (Unlike an LED it does not produce its own light). The panel is made up of several blocks, and each block can be in any shape. Each block is filled with liquid crystals that can be made clear or solid, by changing the electric current to that block. Liquid crystal displays are often abbreviated **LCDs**.Liquid crystal displays are often used in battery-powered devices, such as digital watches, because they use very little electricity. They are also used for flat screenTV's. Many LCDs work well by themselves when there is other light around (like in a lit room, or outside in daylight). For smartphones, computer monitor, TV's and some other purposes, a back-light is built into the product.
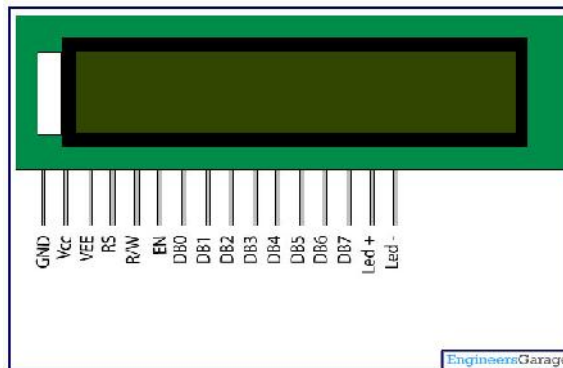

Fig: L c d display

C. KEYPAD

Keypad used here for inputting the data is of the form (4*3) matrix board, which is used to connect to the arm. It is used to input the password for validation purposes. The rows are connected to the output port and the columns are connected to the input port. If no key is pressed, reading the input port will yield 1's for all columns since they are all connected to high (vcc).If all the rows are grounded

and a key is pressed, one of the columns will have 0 since the key pressed provides the path to ground.

D. MAX232

The MAX220–MAX249 family of line drivers/receivers is intended for all EIA/TIA-232E and V.28/V.24 communications interfaces, particularly applications where ±12V is not available.These parts are especially useful in battery-powered systems, since their low-power shutdown mode reduces power dissipation to less than 5μW. The MAX225, MAX233, MAX235, and MAX245/MAX246/MAX247 use no external components and are recommended for applications where printed circuit board space is critical.

E. POWER SUPPLY

Power Supply - Power supply unit consists of the following units:
1. Step down transformer
2. Rectifier unit
3. Input filter
4. Regulator unit
5. Output filter

III.   FUTURE SCOPE

1. This system can be implemented in a few years, with recent development in technology, a fingerprint scanner is neither too expensive nor too complicated to use on daily basis.

2.Memory of finger print module can be expanded .We can use a 1mb flash memory finger print module for increasing the capacity.

Unique Identification Numbers (Aadhar cards) have already been introduced in India that contains an individual's fingerprints and iris scan. Soon every Indian citizen can have a similar identity card and all the government will have all the necessary information required to bring such a system in play.

IV.   CONCLUSION

Thus the advent of this biometric voting system would enable hosting of fair elections in India. This will preclude the illegal practices like rigging. The citizens can be sure that they alone can choose their leaders, thus exercising their right in the democracy.

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