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Biometric Voting System with Centralized Database

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Abstract: *In this paper we propose a multifaceted centralized voting system. The proposed system meets functional and non-functional requirements. The functional requirements are embedded design of well secured identification and authentication process through use of simple biometrics. The non-functional requirements are correctness, reliability and consistency of voters. Also centralized database helps candidates to cast their vote not only from respective booth but also from where they are present.*

I. Introduction

Biometrics is now one of the most popular, reliable and promising identification technologies. It is extensively deployed in education, healthcare, banking and finance and many more applications. The reasons underlying the popularity of biometrics are obvious: reliability, security, efficiency, and high user acceptance. Unlike other identification techniques, biometrics deals with human identity tightly bound to a specific person. The basic point of these devices is also to examine the fingerprint data of an individual and compare it to a database of other fingerprints. Another important reason fingerprint scanners are used is, they provide a quick, easy, efficient, and secure measure through which, an individual with the proper access privileges can authenticate. First, the print is usually searched for in a database of fingerprints, once it is found it then looks at the print to see what access privileges are associated with the print and compares them to the access they are trying to gain. As a result, the use of automated fingerprint identification systems (AFIS) that record, store, search, match and identify finger prints is rapidly expanding. AFIS can be integrated with a microcontroller and other peripherals to form an embedded system which is a comprehensive electronic voting machine with fingerprint print identification system. The biometric voting system reduces the time in both casting a vote and declaring the results compared to the old paper ballot system[5].

II. Fingerprint Recognition

A fingerprint scanner system has two basic jobs -- it needs to get an image of your finger, and it needs to determine whether the pattern of ridges and valleys in this image matches the pattern of ridges and valleys in pre-scanned images.

Fig1: Scanning of fingerprint

The scanning process starts when you place your finger on a glass plate, and a CCD camera takes a picture. The scanner has its own The heart of an optical scanner is a charge coupled device (CCD), the same light sensor system used in digital cameras and camcorders. A CCD is simply an array of light-sensitive diodes called photo sites, which generate an electrical signal in response to light photons. Each photo site records a pixel, a tiny dot representing the light that hit that spot. Collectively, the light and dark pixels form an image of the scanned scene light source, typically an array of light-emitting diodes, to illuminate the ridges of the finger. The CCD system actually generates an inverted image of the finger, with darker areas representing more reflected light (the ridges of the finger) and lighter areas representing less reflected light[2].

III. Architecture Of Proposed System

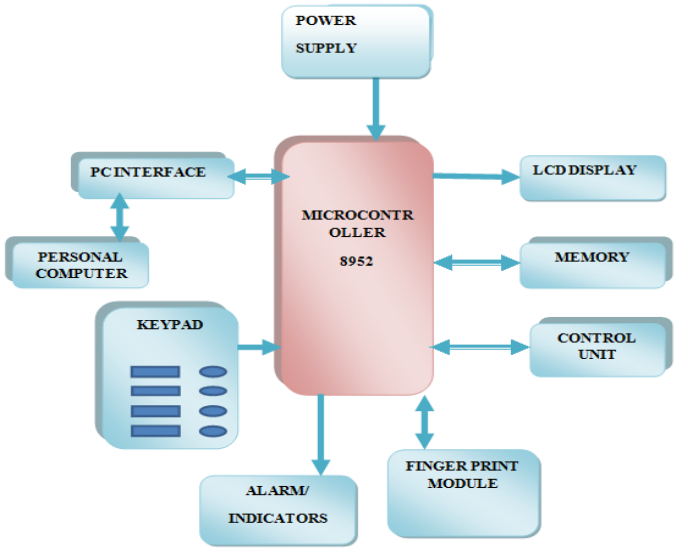
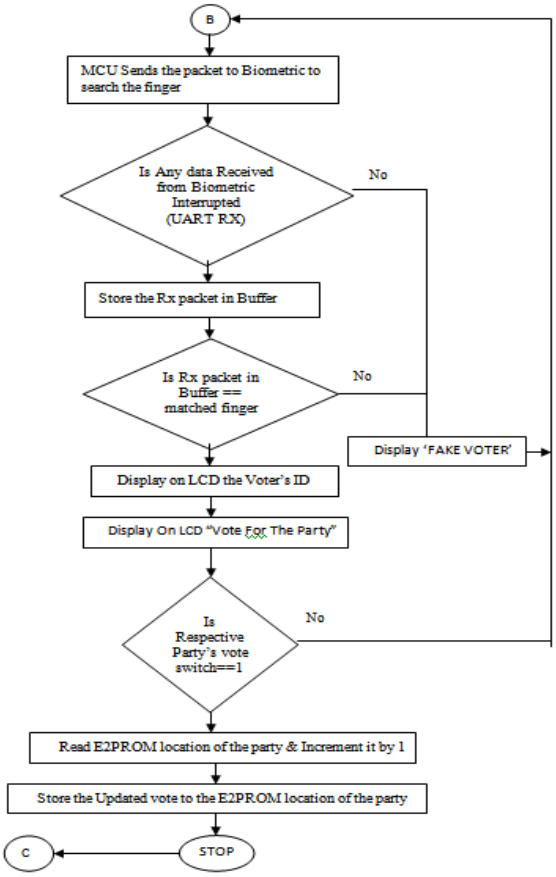


Fig2: Biometric voting machine

IV. Scope Of The System

- Ensure quick and precise biometric Prevent duplicate registration
- Quick authentication by optimized algorithm.
- Excellent recognition rate for damp/dry/slight fingerprint
- Participaition of maximum voters through centralized database

V. Biometric Matching And Authenticating Flow Chart



VI. Feasibility Study

All projects are feasible, given unlimited resources and infinite time. But the development of software is plagued by the scarcity of resources and difficult delivery rates. It is prudent to evaluate the feasibility of the project at the earliest possible time. Three key considerations are involved in feasibility analysis.
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Technical Feasibility:

Technical feasibility centres on the existing system (Hardware, Software etc.,) and to what extent it can support the proposed addition. If the budget is a serious constraint, then the project is judged not feasible.

Economic Feasibility:

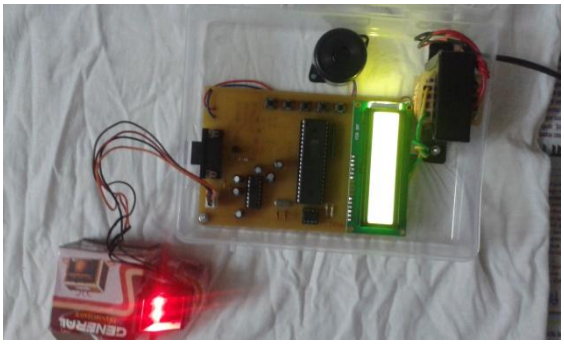
This procedure is to determine the benefits and savings that are expected from a candidate system and compare them with costs. It benefits outweigh costs, and then the decision is made to design and implement the system. Otherwise, further justification or alternations in proposed system will have to be made if it is to have a chance of being approved. This is an ongoing effort that improves in accuracy at each phase of the system lifecycle.

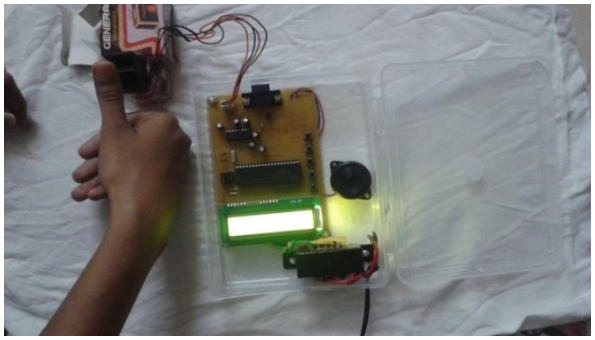
Operational Feasibility:

People are inherently resistant to change, and computers have been known to facilitate change. It is understandable that the introduction of a candidate system requires special effort to educate, sell, and train the staff on new ways of conducting business.

VII. Results

The results were observed as follows:-





Scan the fingerprint of the voter to verify if the voter is valid or not The message displayed that the person is valid user id is found.

By introducing biometrics in voting system we made voting more reliable and secure. And reduced manpower that was required in current voting system. Also this proposed project eliminates fake voting.

VIII. Conclusion

We can conclude that by using this project biometric voting system there will be Improvement in current voting system. Also the chances of fraud votes would be completely reduced and it will become more secure. The excellent recognition rate for damp/dry/slight fingerprint will help casting of maximum votes. This system will bring more Automation in voting system**.**Fingerprint scanners are used as they provide a quick, easy, efficient, and secure measure through which, an individual with the proper access privileges can authenticate.

Reference

[1]. Introduction to Biometrics- By Anil K. Jain, Arun A. Ross, Karthik Nandakumar, foreword by James Wayman
[2]. A biometric-secure e-voting system for election processes; "Mechatronics and Its Applications" Publisher: IEEE; Date 27-29 May 2008
[3]. The research of Fingerprint Recognition Based EVM Publisher: International Journal of Engineering and Technical Research ISSN: 2321-0869
[4]. Tadayoshikohno Adamstubblefield Avield Rubidans.Wallach ―"Analysis of an Electronic Voting system", IEEE symposium on Security and Privacy 2004.\
[5]. Automated Fingerprint Identification Systems (AFIS) - By Peter Komarinski