



International Journal of Engineering Researches and Management Studies

FINGERPRINT BASED EXAM HALL AUTHENTICATION SYSTEM USING MICROCONTROLLER

Pirjade Sana*¹, Shinde Prajakta² & Pingale Kamini³

*^{1,2&3}Department of Electronics & Telecommunication Engineering, Jaihind Polytechnic Kuran, India.

ABSTRACT

The advent of fast growing technologies makes users to have high security systems with electronic identification options. These identification technologies include Exam Hall Authentication user ID and password based systems, and so on. But, unfortunately these are unsecure due to hacker attacks and forgotten passwords. In spite of all these shortcomings and malfunctions these systems are still prevailing; however, the biometric or fingerprint authentication based identification is the efficient and reliable solution for stringent security.

Keywords- *Fingerprint module, LCD Display, Microcontroller.*

1. INTRODUCTION

This biometric-security system is human oriented system and is more accurate than the traditional password based system. Verification is one of the oldest known biometric techniques known but still the most widely used because of its simplicity and good records of accuracy. A fingerprint detecting device needs to be placed in each classroom, office and exam hall etc. The students would be required to swipe their finger across the sensor so as to indicate their presence in the class or exam. The student records are stored in the database for verification. The moment a student swipes a finger across the scanner, a check would be carried out for the student, the device reads finger patterns from the fingerprint module and verifies this data with the data which is already stored pattern in its database. If the details present in the database matches with the stored fingerprint, the system acknowledges the attendance.



fig: Finger Print Authentication



2. BLOCK DIAGRAM

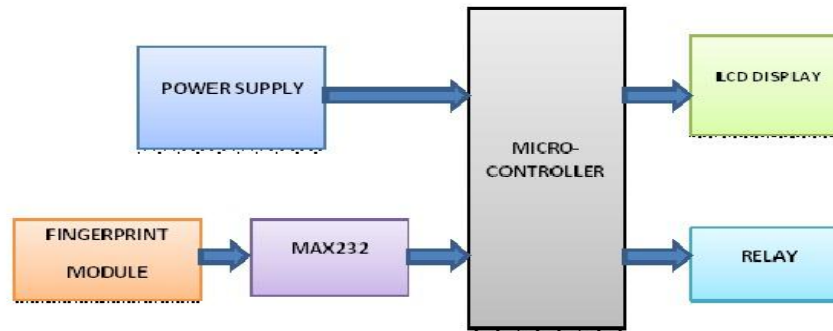


Fig. Block Diagram

Hardware Specifications

Finger Print Module (current SM630)
Microcontroller
LCD Display

Software Specifications

KeilVision IDE
MC Programming Language: Embedded C

Block diagram description

Here we propose a fingerprint based examination hall authentication system. The system is designed to allow only users verified by their fingerprint scan and block non verified users. Our system consists of a fingerprint scanner connected to a microcontroller circuit. In registration mode the system allows to register up to users and save their identity with respective id numbers in the system memory. After storage the person needs to first scan the finger on the scanner. The microcontroller now checks the persons fingerprint validity. If the fingerprint is authorized the microcontroller now sends a signal. This ensures only valid users are allowed to enter the examination section and invalid users are not allowed to enter without any human intervention.

3. FEATURE

- High reliability
- Easy for secondary development

4. ADVANTAGES

- High Security
- High Accuracy
- Easy to Use
- It Standardized



International Journal of Engineering Researches and Management Studies

5. APPLICATION

- Educational institutes
- Industries
- Offices
- Security and access control system

6. CONCLUSION

The fingerprint based exam hall authentication system using microcontroller. This system is more accurate and faster than previous feature-extraction. In our system perfectly verify the fingerprint is valid user or not. If user is valid then allows attending the exam else not allowed

REFERENCES

- [1] .A. Ross, K. Nandakumar, and A.K. Jain, *Handbook of Multibiometrics*, Springer, 2006.
- [2] Anton S. (2002) "Sorting it out: Machine learning and finger-prints", Paper presented at the seminar on Telematik finger-print, Siemens Corporate Technology, Munich, Germany.
- [3] Graevenitz G.A. (2003) "Introduction to fingerprint technology", *A&S International*, Vol. 53, pp. 84 – 86.
- [4] Thai R. (2003) "Fingerprint Image Enhancement and Minutiae Extraction", Unpublished B.Sc Thesis, School of Computer Science and Software Engineering, The University of Western Australia, Australia
- [5] <http://www.crimtrac.gov.au/fingerprintanalysis.html>