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Fingerprint based Exam Hall Authentication

Rajasurya. V, Pradeep. A. S, Gugan. K, Ms.Saranya.K

Student, Department of Electrical and Electronics Engineering, Dr.Mahalingam College of Engineering & Technology, Pollachi, India

Student, Department of Electrical and Electronics Engineering, Dr.Mahalingam College of Engineering & Technology, Pollachi, India

Student, Department of Electrical and Electronics Engineering, Dr.Mahalingam College of Engineering & Technology, Pollachi, India

Assistant Professor, Department of Electrical and Electronics Engineering, Dr.Mahalingam College of Engineering & Technology, Pollachi, India

ABSTRACT: Biometric system and their application are becoming dominant with technical advancement.The biometric recognition is used in all sectors in different forms like voice detection, fingerprint recognition, face detection etc. Though applied in many fields it is still rarely employed in education system especially in conducting examinations and biometric based examination centers are rarely available thus providing an opportunity to research.The proposed system aims to identify impersonators in the examination system using the finger print biometrics methodology and reduce the rate of malpractice in the educational sector.The proposed biometric-based examination authentication system involves both software database and hardware system.

KEYWORDS: Finger-print; examination system;matching; verification; image processing; bio informatics

I. INTRODUCTION

Biometric techniques have become a popular alternative and a reliable means of identification that can support the evolving incredibly powerful computing. From the former exam invigilation process, we can till follow the same old procedures to check and allow the students for their exam hall allocation to attend their exams. But in this procedure, there is an opportunity to make forgery of using another student's data as themselves to attend the exam on behalf of another student. Regarding this problem in exam hall allocation of a student, we can heard many news related to this forgery tricks to attend the exams in name of another person. This one happens only in more competitive exams, but not in other exams. So, the exam hall allocation method to enroll the person's authenticated data is applied using the biometric methods, as a first step, we can use the fingerprint recognition method of the person to enter the allocated hall by verifying the authenticated fingerprint to open the door of exam hall, this project can be made in its prototype model.

II. BACKGROUND

In the manual entry methodology of exam hall authentication usage of more printed documents with data is employed and verification is done physically. But this method does not ensure the person genuine entry inside exam hall. Malpractice using another one's data or hall ticket occurs in this method. The method is unconditional and leads to many ethical issues. The initial step during examination is the authentication of person through different means like availability of passport, driving license, identity card or by using passwords, personal identification numbers etc. Though these methods are followed strictly still there is a room for malpractice that affects the career of many students. Thus the reality is in many developed examination system is that the identity or knowledge based authentication is not sufficient. As an alternating solution the biometric systems based on iris or fingerprint data is employed.By using biometricmethods, the problems faced in traditional methods can be solved. Different domains that employ biometrics in the current scenario are Financial, Technology, Government, Workplace, Recreation, Healthcare and Education [2].Several advantages were found by using fingerprint system based examination system. The simplicity of hardware used for fingerprint makes it cost effective. Additionally, the high accuracy is offered due to the uniqueness of

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fingerprint for every human being. The fingerprint system convert each fingerprint to an image and it is processed and stored in the database improves the flexibility in usage. The portability of the fingerprint sensors results in small device for authentication and it can be easily carried to the examination hall.

III. LITERATURE SURVEYS

OyediranMayowaOyedepo,2020[6] surveyed about development of an examination authentication embedded system based on fingerprint approach. The objective is to monitor the student attendance in lecture, tutorial and laboratory sessions in more efficient way and send the attendance to their parents. The cons identified about the traditional student attendance system was the process of managing student attendance in the university can be very stressful when using the conventional method of paper and file system. Every institution presents a standard on how attendance is to be carried out/taken for student in examination halls, laboratory sessions and lecture halls. Using the conventional methods, there are some disadvantages such as monitoring the student attendance which is time consuming, tedious and prone to errors. These paper and file system attendance taking approaches encourage fraud and impersonation during the examination. As the level of security breach increases, the need for highly secured identification and personal verification technology is fast becoming apparent.

2. OmkarNikam,2019[4] in their work used fingerprint and IOT based exam hall authentication. The problems mentioned through his survey are:
   - Student impersonation,
   - Insecure authentication of students,
   - Manual Verification of students,
   - Corruption in Examination System.

3. MatheusShangeoshali at 2017 proposed fingerprint based exam hall authentication.In this method a better substitute for the using identity card as user identity verification is stated. The naturalness in the use of fingerprint makes it a reliable access control technique. A user no longer needs to carry identity cards and other documents for identification. Further, the work highlights the negatives of former examination methods like the old exam verification procedures being used in most universities have disruptive effects on examinations because the student has to go through a long process to obtain an examination slip which he or she can use to prove that he or she is eligible to sit for an exam. Hence, these old tradition systems can be considered to be time consuming. Additionally, these attendance systems can't make possible for educational officials to use the captured attendance information for analytical purposes so as to develop new ways to promote student attendance and improved student performance, leaves a gap and a desire to come up with new and improved ways of capturing attendance information and verifying if a student is eligible to sit for an exam.

4. S.L. Roshan Rukshana, 2017[5]proposed the design of efficient and synergetic attendance system using fingerprint techniques.The system takes attendance electronically with the help of a fingerprint recognition system, and all the records are saved for subsequent operations. The work clearly states the disadvantages of old exam hall authentication process,as the manually taking attendance is maintained for a long time makes difficult as well as wastes a lot of time. Because they have to confirm, particular student has participated particular subject at the relevant day, if he\she present they should be given a result as a passed or fail and if fail the examination branch should issue another attendance sheet for repeat exam next time, otherwise if some students could not participate the exam on reasonable fact they must be face to exam next time as fresh candidates and also they must keep records of dropped out students as some violations.

OBJECTIVE

1. To design the prototype model for Fingerprint based exam hall authentication.
2. To enroll the person's data after checked the connections of this prototype model, and apply to check the enrolled person's data based on ID number, and other datas is authenticated or not.

IV. PROPOSED SYSTEM

The proposed finger print based biometric verification systems help automatically identify the identity of a person. It works in two phases. In enrollment phase the fingerprint data is collected and stored. In a verification phase,

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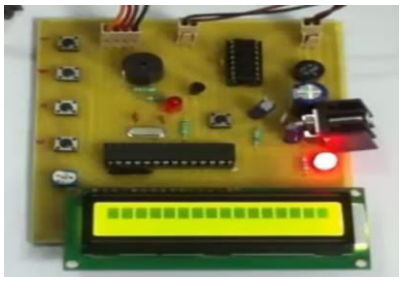
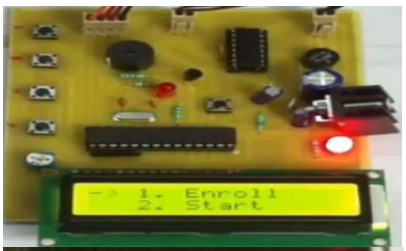
a person desired to be identified places his fingerprint to claim their entry inside the hall. The system either rejects or accepts the submitted claim of a person.

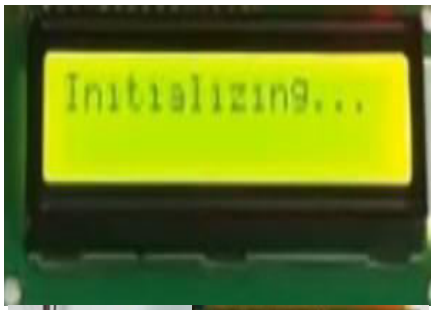
4.1 ENROLLMENT PHASE

The steps in the enrollment or registration method for fingerprint based exam hall authentication to enroll the students is

- Current source turns on LED and Buffer to indicate the Ready working condition of the system
- LCD Display indicates the sensor connected with the system is found, and gives the signal to enroll and start.
- Press the enter button to enroll the fingerprint for scanning and registering the candidate with his ID number.
- After keeping the finger to scan the fingerprint, the image which converted the fingerprint as itself, can be stored with the candidate ID. Then it instructs to remove the finger.
- When the fingerprint data becomes stored, it again gives command to verify the fingerprint, which becomes scanned and stored inside the microcontroller with its registered candidate ID, we again keep the finger on the fingerprint sensor module.
- Once the registered and again keeping finger's prints become same or authenticated, the display will be shown as the prints both are matched.Else, it can shows both the fingerprints are not matched, either the fingerprints aren't scanned correctly or keeping another finger in module for registered another ones.







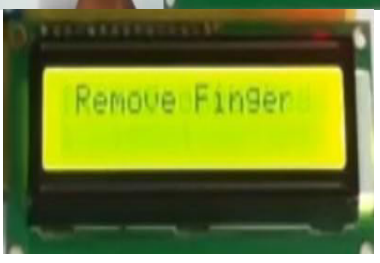


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Figure 1. Hardware Setup of the Enrollment Phase

4.2 VERIFICATION METHOD:

After the enrollment, the verification method was used to verify the matched fingerprint to open the door. The verified fingerprint is registered and stored inside the microcontroller, which controls the all working process of this prototype system.Then, the data's will be given to motor sensor, which leads to open the gate or door for the registered authenticated person. Here, the LCD display shows the fingerprint registered is authenticated for the person. The registration and verification method using this prototype shows that exam hall authentication using fingerprint scanning was applicable upto 100 persons per hall or room.

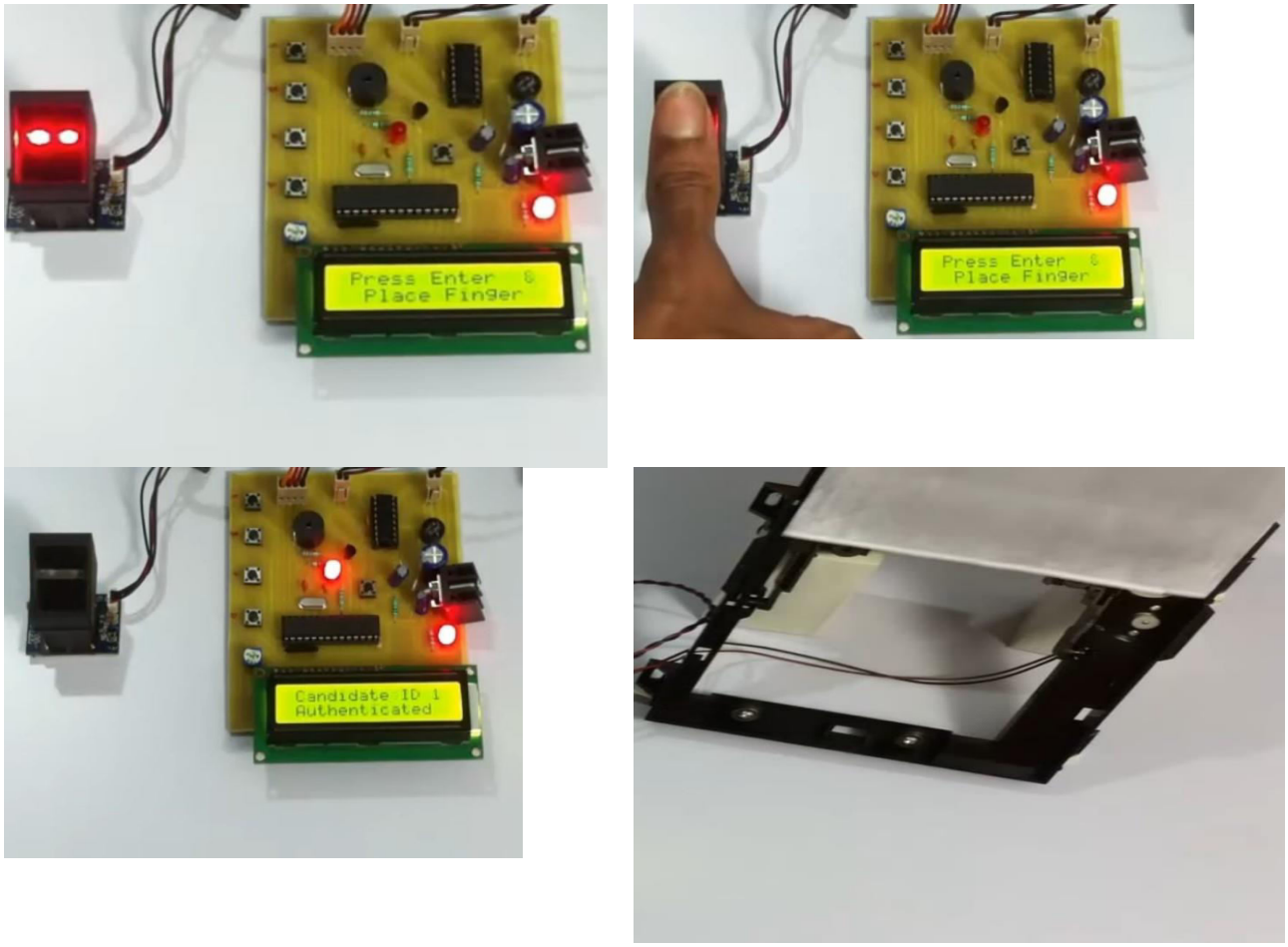

Figure 2 Hardware Setup of the verification Phase

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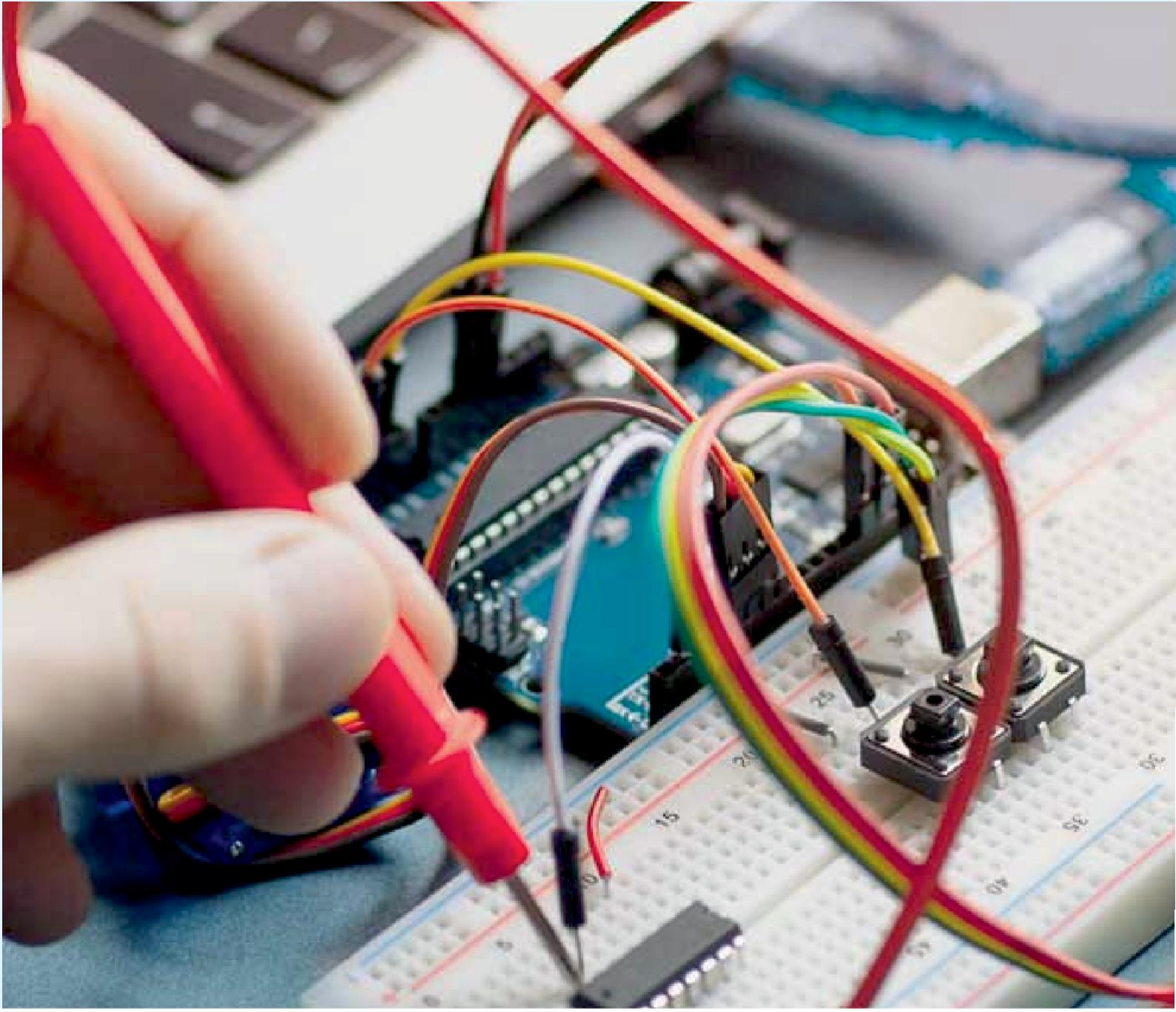
V. CONCLUSION

The high level of security in exam hall authentication using biometric electronic is a best replacement for manual authentication and it is efficient and reliable solution for malpractice prevention. The proposed electronic authentication device based on fingerprint outperforms existing systems in terms of accuracy, speed and cost efficiency.

REFERENCES

1. Saheed Y.K. Hambali M A. Adeniji I.A and Kadri A. F. (2017). Fingerprint Based Approach for Examination Clearance in Higher Institutions, FUOYE Journal of Engineering and Technology, Volume 2, Issue 1, ISSN:2579-0625 (Online), 2579-0617
2. Seng Chun Hoo, Haidi Ibrahim, "Biometric-Based Attendance Tracking System for Education Sectors: A Literature Survey on Hardware Requirements", Journal of Sensors, vol. 2019, Article ID 7410478, 25 pages, 2019. https://doi.org/10.1155/2019/7410478
   V. Kulkarni Vaishnavi, "Fingerprint Based Exam Hall Authentication", International Journal of Research in Engineering, Science and Management Volume-2, Issue-10, October-2019.
3. Omkar Nikam, "Fingerprint and IOT Based Exam Hall Authentication" , International Journal of Research Publication and Reviews, Vol (2) Issue (7) (2021), Page 652-656.
4. S.L. Roshan Rukshana, "The design of efficient and synergetic attendance system Using fingerprint techniques", Proceedings of 7th International Symposium, SEUSL, 7th & 8th December 2017.
5. Oyediran Mayowa Oyedepo ,"Development of An Examination Authentication Embedded System Based on Fingerprint Approach." IOM Oyedepo - International Journal of Computers and Technology,(2020).
6. Matheus ShangeoshaliIngashitula ,"Fingerprint Based Exam Hall Authentication"Bachelorhonours degree in digital communication technology in networking and security international university of management at November 2017.



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