IOSR Journal of Engineering (IOSRJEN) **www.iosrjen.org**
ISSN (e): 2250-3021, ISSN (p): 2278-8719
Special Issue || Dec. 2019 || PP 51-53
International Conference on Management Practices, Innovations & Research 2019

Fingerprint Based Exam Hall Authentication System

Rajat Paunikar[1], Tejas Bagne[2], Harshal Dongre[3], Abhishek Deotale[4], Prof. Vipin S. Muley[5]

[1,2,3,4]*Student, Tusiramji Gaikwad Patil College of Engineering and Technology Mohgaon, Nagpur.*
[5]*Assistant Professor and HOD Electrical Engineering, Tulsiramji Gaikwad Patil College of Engineering and Technology Mohgaon, Nagpur.*

Abstract: *Multi biometric is an authentication technology using different biometric technology such as fingerprint, facial features and, vein pattern. The process for allowing student to sit for an examination in most universities has been through the presentation of medium of identification such as ID cards,, fees clearance card, photo cards, etc. this piece of work is motivated by the fact that the method of authenticating a students for an examination has an obvious problem such as presentation of fake clearance card and so on. But bio metrics is a technology that uniquely identifies a person based on his physiological or behavioural characteristics. The aim of this work therefore is to design a program that will address issues of exam misconducts such as impersonation and revealed the effectiveness of biometric system using fingerprint in conducting examination clearance. The proposed system used fingerprint biometric approach, the system recognizes an individual by comparing his/her biometrics with every record in the database rather than old manual method. The expected result from the system is that the new system will compulsorily prompt for biometric in order to allow student gain access into the system for authentication and identification of real student before entering into examination hall.*

Keywords*:–Biometrics, Authentication, Examination, Fingerprint, Authorised Users .*

I. Introduction

All academic institution have certain criteria for admitting students into examination hall. Hence accurate record of attendance and fees payments is necessary.

To verify identity of person it is very critical and important task in society. Cash terminals, access control, examination pass identity, internet transactions are the basic examples of security issues where the identities of the users are important and useful. Most of the universities adopted paper means authentication for eligibility of students for examination. This is issued by the university's examinations and record units. This contains vital information needed in identifying candidates. These may include the student's name, passport photographs and school's authentication stamps. This is known as 'examination pass'. It is the method devised by the institution's authorities in identifying eligible candidates for various examinations.

It is note that with the level of information provided, they still open to student as some of information displayed. By this pass can still be tampered with for the sole purpose of impersonations and other examination fraud as the case may be.

Some of students get duplicate pass of examination hall that leads to cheating or fraud. Some of these passes as the case may be are sometimes duplicated and then stamped with fake ones fabricated for the purpose of impersonation. Even, the passport photographs are sometimes removed and replaced with another one and in addition, it is not a viable enough to distinguish between two identical twins.

In case of these irregularities and fraud that may arise from the use of the paper based examination pass issuance to students for examination identities, the fingerprint as a form of biometrics (which measures physiological and behavioural characteristics) is viable to provide reliable identification system is a better alternative since it is a widely accepted fact that every human being has a unique set of fingerprints. This may be adopted for the sole purpose of proving the eligibility of students for examinations.

II. Aim And Objective Of Study

The aim of our research study is to design a system that approach to conduct examination in Indian universities. the following objectives should be undertaken:

- To create a system that is capable of tracking cheaters or fraud users in examination system by using fingerprint biometrics.
- To minimize the rate of corruption in educational sector and increase rate of self confidence of exam holders.

- To take examination in secure environment and also ensure strict security unregistered students do not write exam for other registered users or students.

III. Block Diagram

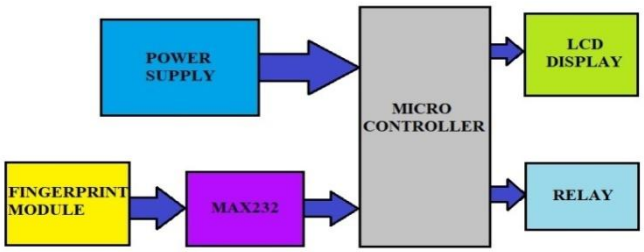

Fig: Block Diagram of fingerprint based exam hall authentication system

The fingerprint based exam hall authentication system is design in such way that the only verify users are allow in examination and they are verified by their fingerprint scan and stop non verified users. Our system consist of fingerprint scanner on which users give their fingerprint for scanning purpose is connected to microcontroller circuit via max 232 IC. The rectified power supply is given to microcontroller. In registering mode system allow users scan fingerprint on scanner. The microcontroller now check users fingerprint validity. This ensures only valid users are entered to examination hall and invalid users are not allowed to enter in examination hall without any innervations.

IV. Hardware Specification

- Center Tap Transformer
- Rectifier
- 8051 Microcontroller
- R305 Fingerprint Sensor
- Resistor
- LCD (liquid crystal display)
- Capacitors
- Transistors
- Cables and Connectors
- Diodes
- PCB
- LED (light emitting diode)
- Switch
- IC MAX232

V. Software Specifications

- Protease 8.0 software
- MC Programming Language: Embedded C
- Operating system : Windows Family

VI. Methodology

In this section, I describe the methodology used for the software design and also analysed the system. The system strengths and weaknesses were also viewed to determined areas for improvement. To actualize this the software engineering methodology called structured system analysis and design methodology (SSADM) was used while top down software design approach will be followed.
The biometric identification consist of two stages: Enrollment and Authentication

Structured system analysis and design methodology (SSADM).

While using the system structured analysis and design methodology SSADM the following sequence of step were carried out and they include

I. Problem identification: Here researcher tries to understand the problem facing imo state university owerri in handling and conducting their student's examination.

II. Investigation or fact findings: A thorough investigation will be carried out on the present system that exist in the university by me this is to enable me finds out the facts about it before trying to improve on it. For good job to be achieved I shall logically go through the various phases of institute, so as to get accurate data collections. The method for data collections shall be: evaluating all forms, interviewing through oral and written method (questionnaires), observation method and studying of procedural manuals.

III. Analysis: the analysis of data gathered will be established. We will try to know how quickly and cheap is the present system, how does it meet the objectives and its problem spots.

IV. Design: we structured the system under study, following the specification of processing requirement such as input files, master files and segmentation of these processes into programs.

VII. Advantages

1. High security
2. Accuracy is high
3. Easy to use
4. It is standardised

VIII. Application

1. Educational institute
2. Industries
3. Offices
4. Security and access control system

IX. Future Work And Expectations

1. Biometrics access using fingerprints and blood flow detection to avoid cloning of fingers using plastics.
2. Fingerprint based student attendance, using GSM, this is to eliminating manual attendance that any student can sign for other student.
3. Regarding our fingerprint identification system, we are planning introduce more indexing techniques like ridge density tolerance etc.
4. The problem of using wireless LAN is that wireless devices are costly and implementation is hard because the wireless devices work in small area.

References:

[1]. A.Ross, K.Nandakumar, and A.K.Jain, Hand book of multi biometrics, spinger, 2006.
[2]. Saheed Y.K, AliyuJubril, (2015). A examination clearance frame work using biometrics system. Multi disciplinary innovation and technology transfer. D. Awanb or, Credentialing process in the Nigerian educational Users.
[3]. Automatic Teller Machine, International Journal, LAGOS, 2005.
[4]. ATMEL 89S52 Data Sheets.
[5]. E. I. Bridget, Examination Verification System Using Biometrics (A Case Study Of WAEC),July 2013.
[6]. https://www.researchgate.net/publication/320856056_Designing_Fingerprint_Based_Exam_Hall_Authentication_A_PROJECT_REPORT_BACHELOR_HONOURS_DEGREE_IN_DIGITAL_COMMUNICATION_TECHNOLOGY_IN_SIGNATURE_SIGNATURE
[7]. https://www.academia.edu/32406559/FINGERPRINT_BASED_EXAM_HALL_AUTHENTICATION_SYSTEM_USING_MICROCONTROLLER.