

Attendance System Using Fingerprint Identification with GUI

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Abstract

Every academic institute has their own ways & criteria for students regarding their attendance in class. Keeping day to day data of attendance in real time format and take necessary action it's an crucial task and it is very important. At present attendance is usually noted using paper sheets and the old file system, somewhere technology updates old system with biometric system. It becomes difficult for the management to regularly update the record and manually calculate the percentage of classes attended. Proposed system designed to overcome to overcome the problems associated with attendance system. Biometric systems have been widely used for the purpose of recognition. These recognition methods refer to automatic recognition of people based on some specific physiological or behavioral features. Main aim of this method is to develop transparent attendance system and keep real time data and it is displays online data for parents and other academic use. Attendance System Using Fingerprint Identification with GUI is reliable and easy to implement which gives accurate results.

Keywords: fingerprint, biometric, GUI, attendance

I. Introduction

An automatic attendance system using fingerprint verification technique was proposed. The fingerprint technique verification was achieved using extraction of abnormal point on the ridge of user's fingerprint. For the authentication of the specific authorized candidate done with comparison algorithm which will be performing one to one comparison of a captured fingerprint templates against the stored templates in the database. The proposed automatic attendance system signals either authentication or non authentication based on logical result of previous one to one verification of person's authenticity. Administrator also viewed and proposed biometric system using fingerprint identification for attendance automation of students in an organization. Host person real time monitor attendance of each student in organization irrespective of her/his department to simplify and speed up the process of student's biometric impression. and it will segregate and store on the account of that particular student. The proposed system emphasizes a simple, reliable and cost effective model for face classrooms attendance monitoring that uses existing student ID card chip as the passive tag with additional short message services to parents as weekly summary.

For example to pass through a restricted area you may have to scan your fingerprint through a biometric device. A new template will be generated that will be then compared with the previously stored templates in database. If match found, then the person will be allowed to pass through that area. On the other hand

verification means the process of checking whether a query biometric sample belongs to the claimed identity or not.

Following are the generally used biometric systems are:

- a) Iris recognition
- b) Facial recognition
- c) Fingerprint identification
- d) Voice identification
- e) Signature verification

Human beings have been using fingerprints for recognition purposes for a very long time, because of the simplicity and accuracy of fingerprints. The proposed system uses fingerprint recognition technique for obtaining day to day hour to hour student's attendance.

II. SYSTEM DESIGN

System overview

In the proposed method we are getting inputs in the form of biometric thumb impression and maintaining its records in an academic institute or an any organization it's difficult to manage the students data. technology updates the drawback of manual attendance records also stores it for the long time future use. For this reason an efficient system is designed. While considering an academic institutes, taking the attendance of students on daily basis and maintaining the records is a major task

This system gets attendance of individual student attendance with the help of a fingerprint sensor and all the records are of that candidate saved on a computer server. Fingerprint sensors and LCD screens are placed at the entrance of each room. In order to mark the attendance, student has to place his/her left thumb or right thumb impression on the fingerprint sensor. On identification student's attendance record is updated in the database and he/she is notified through LCD screen. No need of all the stationary material and special personal for keeping the records. An automated system replaces the manual system. Proposed system is easy and reliable to store and read the data of every student. We uses controller to read and store data in memory which will be copied in database later. It is interfaced with driver IC through protocols. Proposed system have several advantages and it overcomes drawback of tradition manual attendance system, any parents having login number and password can access attendance report from remote place and take necessary action. Proposed system is less time consuming, more accurate.

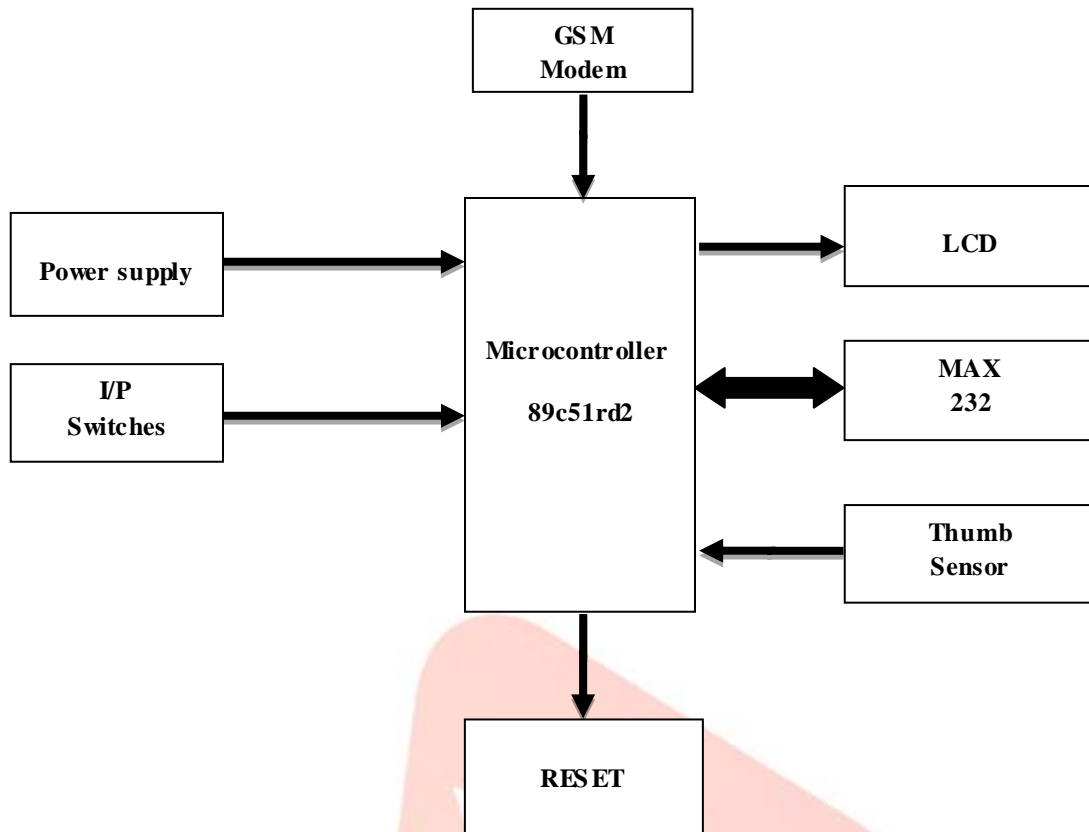


Figure1. Block Diagram of Proposed System

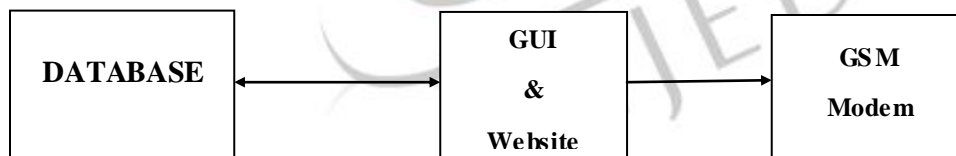


Figure2. Block Diagram of Transmitter System

III. SOFTWARE DESIGN

Fingerprint identification is based on two factors:

- (i) Persistence: the basic characteristics and features do not change with the time,
- (ii) Individuality: fingerprint of every person in this world is unique

To store the data of student present in the Attendance machine we have to build software which can store the data and schedule the data as per the student record. The data is feed to the software with the help of cable MAX 232. By the help of software the staff member can enroll the student class -test marks, attendance updates, as per student record.

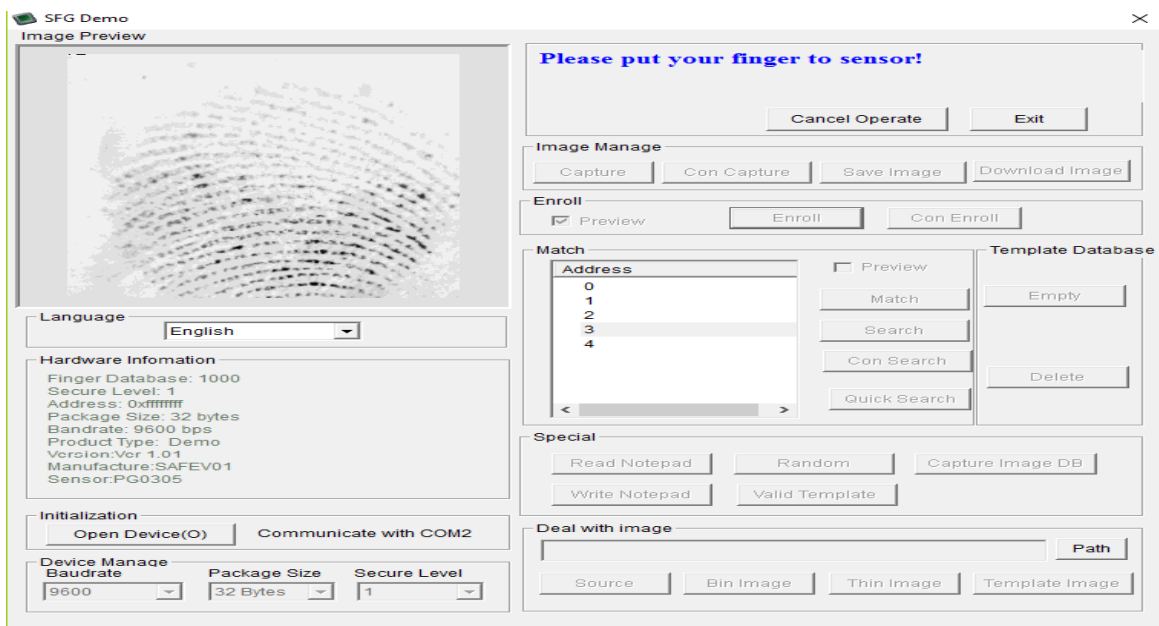


Figure3. Fingerprint identification with GUI

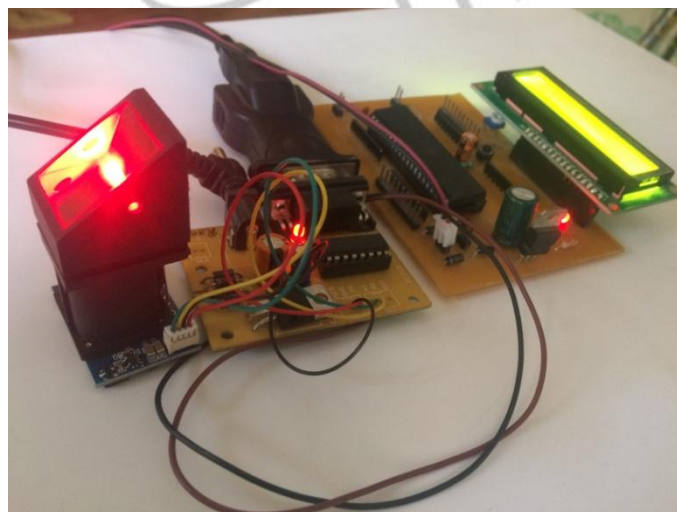


Figure4. Fingerprint identification sensor kit & Controller kit

III. WEBSITE DESIGNING

The Aim of the Project is to inform the Parents about the student Attendance and to aware them about the marks of Class-test or any Student Related Information. To fulfill this proposed system Design an Website Which will give the Information to Parent of the Student Marks and their Attendance records. Therefore each student will be allotted a unique Registration number through which the student will be verified, and then all the information related to the student will be ported to the Registration number, such as class-test marks, attendance updates. Each parent will be allotted a user id. and password of the particular Student registration number .So that the parent can check the data of attendance as well as Class-Test Marks

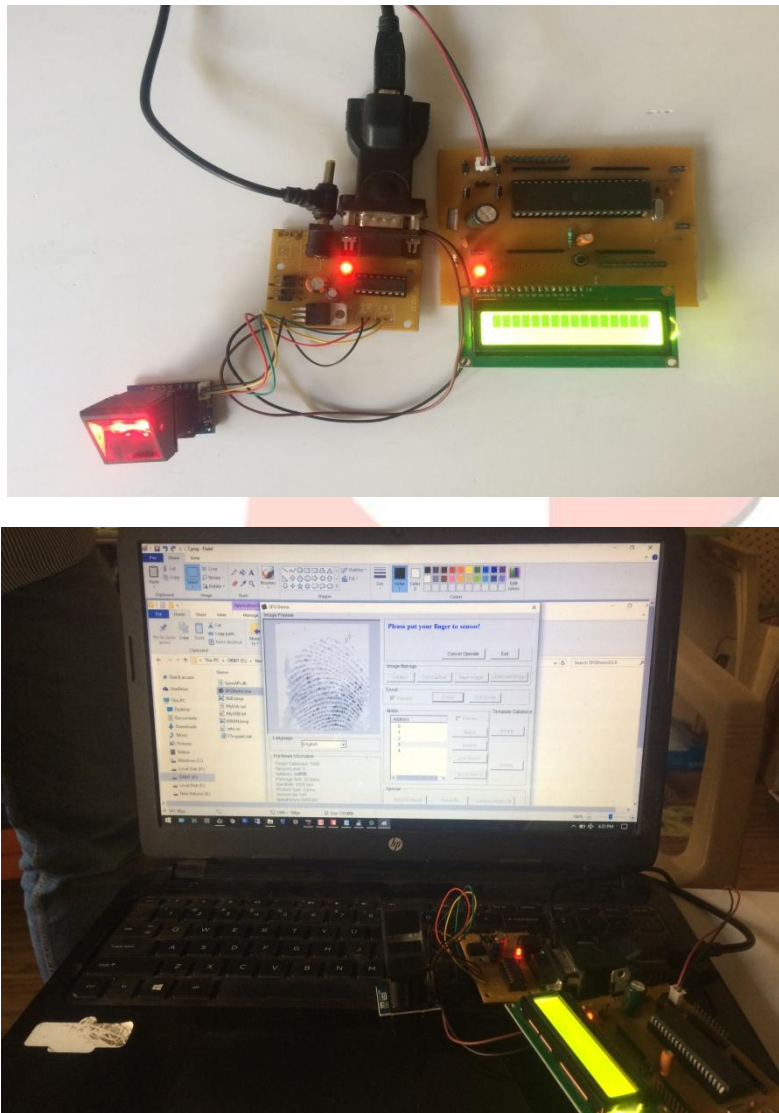
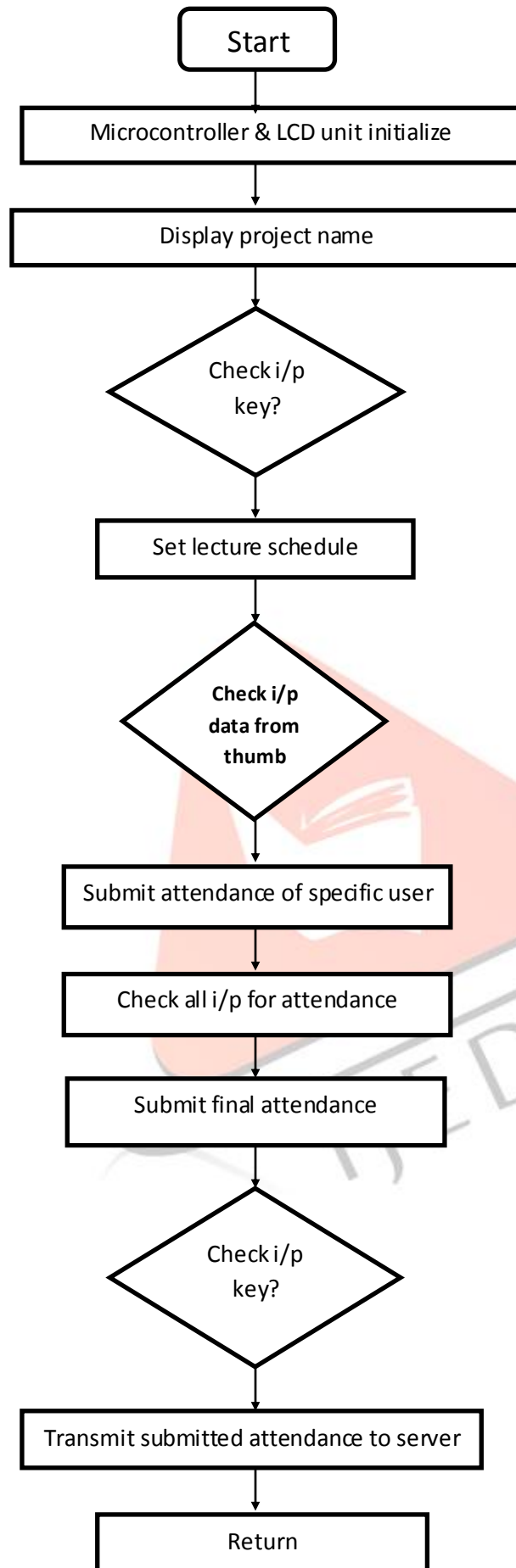
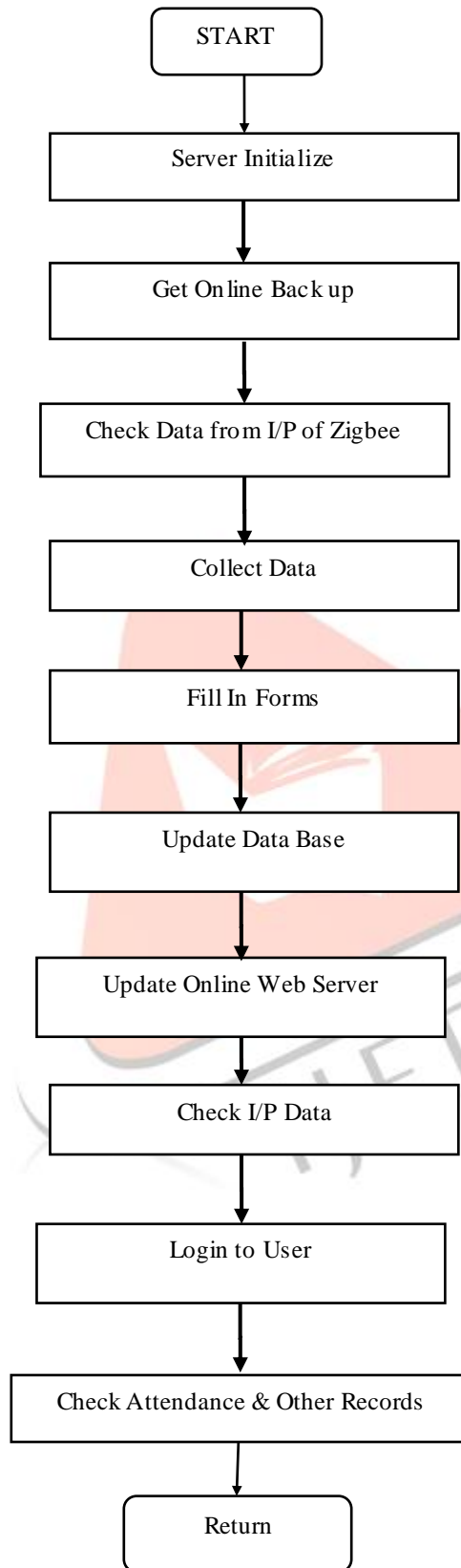


Figure5. Overall proposed system with GUI

Flowchart 1



Flow chart 2: Server & Data Base Initialization



IV. Fingerprint Acquisition Algorithm

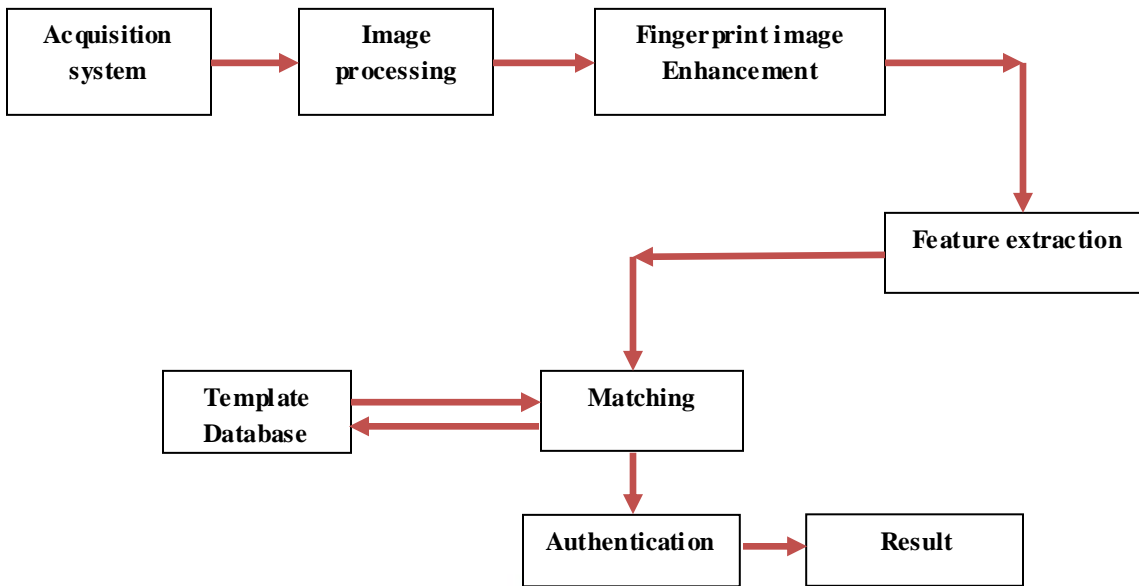


Figure7. Architecture of fingerprint matching algorithm

Fingerprint data acquisition works on feature extraction principle includes input image detection and enhancement method. Where feature extraction mainly works on Minutiae Extraction, Ridge Detection Minutiae Detection.

V. RESULTS

The proposed system is developed and tested for one batch of 60 students. It gives the result in real time approaches in details. Results are generated in more reliable way than tradition data storing keeping methods.

The accuracy of the system is shown Table 1

Total No. of students for a class of subject (60)	Present Students	Late Students	Absent Students
DSP	41	14	05
Diode Theory	32	13	05
Robotics	40	-	20

VI CONCLUSION

Fingerprint attendance system is elegant and efficient way to monitor the presence of students in the class over an entire semester for various courses. With the help of this attendance system, every faculty can get the attendance of a particular student for entire year in a tabular form within few seconds, Also it is concluded from the above proposed system that a reliable, secure, fast and an efficient system has been developed replacing a manual and unreliable system. Results have shown that this system can be implemented in academic institutes for better results regarding the management of attendance. This system will save time, reduce the amount of work the administration has to do and will replace the stationery material with electronic apparatus. Hence a system with expected results has been developed but there is still some room for improvement.

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