AUTOMATED BIOMETRIC ATTENDANCE MANAGEMENT SYSTEM

Abstract

Currently, most schools and institutions do have difficulties to monitor their students' security and attendance system using biometrics alone, where the procedures are inefficient in monitoring the students' security and managing their attendance. The application of system as a college monitoring system to improve class attendance procedure, automatically monitor the interest group movements and increases their security. Using this makes it easier and faster to detect students' attendance in a lecture class. In this system, the fingerprint recognition is also adopted to enhance the procedure of identifying authentication of student more securely and reliable for facilities management, gateway access and facilities control, it will also help the college management to provide visibility of assets and effective user tracking. This research paper removes the limitations of the biometric technology by maintaining a centralized database of users according to their consistency, a dynamic interface that provides detailed list of registered candidates/ users and hence integrating the biometric system having a central database station.

Keywords: Authentication, Biometric Recognition, finger prints

Introduction

In this project, biometric system used to record student attendance automatically. This system will integrate with Fingerprint Reader or other Fingerprint Reader that available in the market. The objective of this project is to develop reliable attendance recording system based on biometric attendance that can be used to monitor the presence of students. This system can automatically acquire, store and calculate data and student attendance in the site. Teachers will lead a small handheld with finger scanner and students will be pressing their fingers on it to record attendance. This system has got many advantages.Manual data entry can be avoided no proxy presence made.Caregivers can be notified about non-attendance. The main objective of this project is to monitor the attendance of students in lecture sessions, tutorials and laboratory and others in a more effective way

Block diagram:

Time and Attendance Terminal
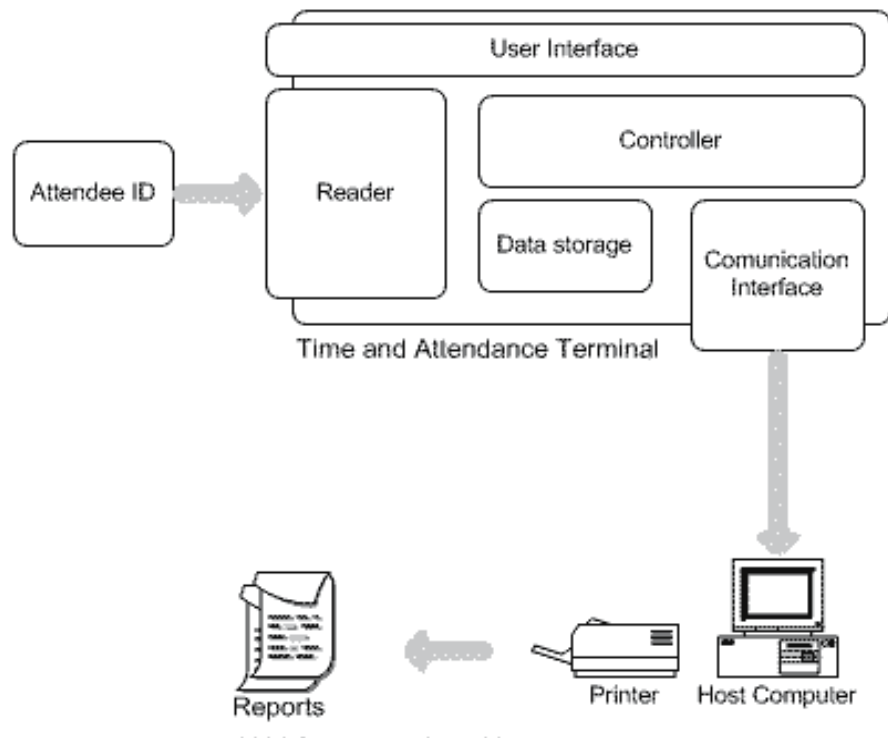
Description:

- **Student   ID**
  Student ID typically stored in magnetic stripe, barcode, microchip or RFID transponder. The most common medium now is PVC card. Other way is to use human biometric uniqueness as student ID. For example: finger print, finger vein, finger and palm geometry, eye iris, voice, body gesture, etc.

- **Time and attendance machine**

  Time and attendance machine components:
  - Microcontroller, as the brain of the machine
  - Reader module to read student ID. For example: barcode reader, magnetic card reader, RFID reader, smartcard reader, finger print reader, finger vein reader, *handkey* reader, voice recognition device, etc.

- **Biometric System:**
  - It based on the fingerprints using the world's most advanced products of leather (the inner layer of skin) and its own fingerprint acquisition of advanced fingerprint comparison algorithm. Memory device to store attendance transaction before move to host computer.

Advantages:

- more accurate and faster time tracking/recording, data processing and report generation
- reduce human error
- reduce man-hour cost of HR department
- flexible reports can be generated fast and easy
- ready data for other system such as payroll software
- open possibility to realize advanced features such as online employee tracking, managing remote/distributed workers, etc

Applications:

1. This can be used in educational institutions.
2. Biometric attendance system can be used in industries.
3. Biometrics can be used in ATM for authentication.
4. Finger print authentication can be used in access control.

Limitations of the Circuit:

- There is a chance of misusing the technology by placing a fake finger print.
- Modules are sensitive and they need to be handled carefully.