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Fingerprint Based Students Attendance System using GSM

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Abstract— **The system consists of microcontroller interface with finger print sensor, and GSM Module Here finger print is used to sense the finger print of the student and send the attendance to the guardian/parents through GSM module. And the classroom attendance status how many students present or absent, the corresponding data will send to the authorize person through GSM. Real Time Clock will be displayed in the LCD.**

Keywords— *Fingerprint, Arm7,GSM, Attendance System*

I.   INTRODUCTION

The most common means of tracking student attendance in the classroom is by enforcing the students to manually sign the attendance sheet.There are the disadvantages of using this system. The attendance sheet is passed around the class; some students may purposely sign another student's name. Another issue of having the attendance record in a hard copy form is that a lecturer may lose the attendance sheet. In this project, we are going to make finger print based Attendance system using ARM7 Microcontroller.

Here we are going to use Finger print scanner as a input. Finger print scanner take a input of student thumb. The database for Fingerprint identification is created and stored in keil software. It kept record of person like student roll No, Date & Time etc.

II.   LITERATURE REVIEW

Biometric technology that involves the identification and verification of individuals by analyzing the human fingerprint characteristics has been widely used in various aspect of life for different purposes, most importantly as regards this study the issue of employee attendance The main aim of this paper is to develop an accurate , fast and very efficient automatic attendance system using fingerprint verification technique. We propose a system in which fingerprint verification is done by using extraction of minutiae technique and the system that automates the whole process of taking attendance, The study was conducted using a quantitative approach by designing a questionnaire as the data collection instrument based on fingerprint matching biometric technologies.

The survey involved 6 employees based on stratified random sampling technique. The results however show that fingerprint biometric identifier was found suitable for the employee attendance management system of the organization

a)   EXISTING METHOD

In exiting method only the attendance can be counted. We cannot transmit it over a signal for further processing.

b)   PROBLEM STATEMENT

Using the fingerprint scanner does not take into consideration when a person physically changes. A person's finger changes sizes then the fingerprint scanner does not take this into consideration.

III.   PROPOSED METHODS

The project was designed in such a way that in order to reduce the human effort and increase the accuracy for student monitoring system in organizations. Extra action required to intimate to the home

BLOCK DIAGRAM
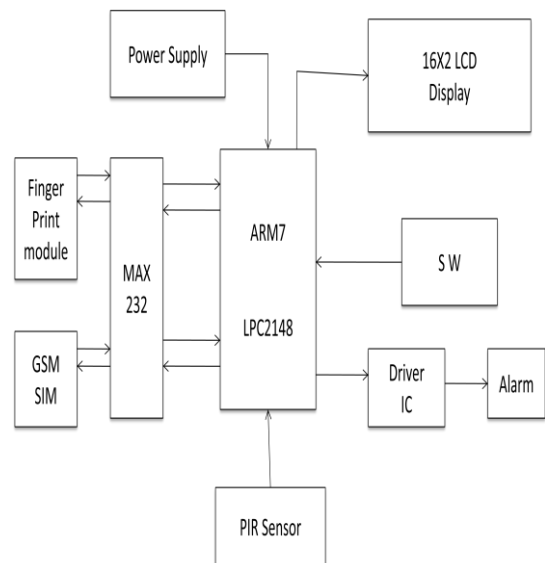
IV.   SYSTEM HARDWARE

In this block diagram we are using following component that can be required for automatic queue control system they are as follows:-

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1.   ARM 7-LPC2138
2.   Finger print scanner
3.   MAX 232
4.   LCD
5.   GSM Module
6.   PIR sensor
7.   **Emergency Switch**

1)   ARM MICROCONTROLLER (LPC 2148)

ARM microcontroller LPC 2138 has two UART ports one is used for Zigbee Communication and second is used for Fingerprint module connection.

2)   FINGER PRINT SCANNER

This is a fingerprint sensor module with TTL UART interface for direct connections to micro-controller UART or to PC through MAX232 / USB-Serial adapter R305
module is used to take a entry of person by Thumb input. Finger Print Scanner processing include two types of matching 1:1 or 1:N.When enrolling user needs enter finger two times. Add   search ,delete can be done along with keypad.

WORK OF SCANNER

Uses the ridge endings and bifurcation's on a persons finger to plot points known as Minutiae. □□□□□□□□□□□□□□□□□□□□The number and locations of the minutiae vary from finger to finger in any particular person, and from person to person for any particular finger. Reliability depends on how many "points" You match.

3)   MAX 232

MAX232 is purposed for application in high-performance information processing systems and control devices of wide application.The MAX232 is an IC, first created in 1987 by Maxim Integrated Products, that converts signals from an RS232 serial port to signals suitable for use in TTL compatible digital logic circuits.The MAX232 is a dual driver/receiver and typically converts the RX,TX, CTS and RTS signals.

4)   LCD DISPLAY

LCD is the user interface of the system.2x16 JHD162A LCD is used. Different modes of operation such as enrolment of new IDs, marking attendance and deletion of IDs are displayed on LCD We have used the 16 by 2 LCD that means that it can display the two lines containing 16 characters each. The Pixel Matrix is of 7 by 5 pixels that are each character can be displayed using 7 columns of the pixels and 5 rows of the pixels

5)   GSM module

GSM stands for Global System for Mobile Communications. It's used as associate data transmission module. We are going to use GSM SIM 800 Module for the projected system and its figure is shown below.

This module will settle for any GSM network operator SIM card. Advantage of this module is that we are able to use RS232 port to speak. This GSM electronic equipment is extremely versatile plug and play quad band GSM electronic equipment for direct and simple integration to RS232 applications. GSM module uses customary AT Commands

6)   PIR Sensor
•   Hc-SR501 is based on infrared technology.
•   High sensitivity ,
•   High reliability,
•   Widely used in various auto-sensing electrical equipment
        Specifications
•   Voltage 5-20V
•   Power consumption: 65mA
•   TTL output: 3.3V, 0V
•   Delay Time :Adjustable(.3->5 min)
•   Sensing range: less than 120 degree , within 7 meters
•   Temperature: -15 to +70.

7)   Emergency Switch
In such cases when operator pressed the Emergency Key then the predefined message of key will be send to corresponding Principle and HOD office

CONCLUSION

The main purpose of this project is to monitor the student attendance send this attendance to their parents. This system resists students from bunking classes through SMS sending feature to parents. Biometrics has been used effectively for more than a decade for time and attendance system. Fingerprint atendance system is a cost effective simplified system that uses fingerprints for identification. The fingerprint is unique to each individual and cannot be shared

Governing the human concerns its urge to pay the aspect of manual interruption more efficiently

REFERENCE

[1] Murizah Kassim, Hasbullah Mazlan, Norliza Zaini, Muhammad Khidhir Salleh "Web-based Student Attendance System using RFID Technology" 2012 IEEE.

[2] B. Rasagna, Prof. C. Rajendra "SSCM: A Smart Systemfor College Maintenance" International Journal of Advanced Research in Computer Engineering & Technology, May 2012

[3] LI Jian-po, ZHU Xu-ning, LI Xue, ZHANG Zhi-ming "Wireless Fingerprint Attendance System Based on ZigBee Technology" 2010 IEEE.

[4] O. Shoewu, O.A. Idowu "Development of Attendance Management System using Biometrics" The Pacific Journal of Science and Technology, May 2012.

[5] "How does a fingerprint sensor work" Online Available: http://wiki.answers.com/Q/How_does_a_fingerprintsensor *work Accessed: Sept. 15, 2013].*

[6] "What is GSM?" Online Available: http://www.tutorialspoint.com/gsm/gsm_overview.htm[Accessed: Sept. 17, 2013].

[7] L. Rajasekar, S. Vivek "Wireless Fingerprint Attendance System using ZigBee Technology" International Journal of Power Control Signal and Computation (IJPCSC), Vol3. No1. Jan-Mar 2012.