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BIOMETRIC ATTENDANCE SYSTEM BASED GSM

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Abstract –Attendance is one in every of the work ethics which is valued by most employers. In current educational institutions attendance and academic success are directly related. Therefore, proper attendance management systems must be in situ. Most of the academic institutions and government organizations in developing countries still use paper based attendance method to watch the attendance. There's a requirement to exchange these traditional methods of attendance recording with a safer and robust system. Fingerprint based automated identification system based are gaining popularity because of unique nature of fingerprints. During this paper, a unique approach for fingerprint based attendance system using Lab VIEW and GSM technology is proposed. Optical fingerprint module is employed for capturing and processing fingerprints. Features like recording of attendance in a very document together with the date and time of attendance are incorporated within the system. GSM technology is employed to intimate the fogeys about student's attendance. The proposed system is implemented within the university and its performance is evaluated based upon user friendliness, accuracy, speed, security and price.

1. INTRODUCTION

The most common means of tracking student attendance within the classroom is by enforcing the scholars to manually sign the attendance sheet, which is often passed round the classroom while the lecturer is conducting the lecture. There are numerous disadvantages of using such system. The attendance sheet is passed round the class; Some student's may accidentally or purpodely sign another student's name. Currently, the magnetic card attendance system is widely employed in General Biometric System. as an example, the cardboard is simple to lost and damage. And most of all, parents aren't aware if their children are absent from the category. The fingerprint contains a lot of benefits, like unique, permanent, good anti-fake and straightforward to use. So it's recognized increasingly by people enrollment ID. General Biometric system shows the final architecture of a biometric system fingerprint device. GSM is that the Global System for Mobile Communications. it's called 2G or Second Generation technology. It's developed to form use of same subscriber units or transportable terminals throughout the globe SMS could be a bidirectional service for brief alphanumeric messages. Messages are transported in an exceedingly store-and-forward fashion. From one point to another point to another point SMS.A message will be sent to another different subscriber to the service and acknowledgement of receipt of is provided to the other sender. Messages may be stored within the SIM card for later retrieval.

2. HARDWARE REQUIRED

(a). Arduino UNO Microcontroller

(b). Fingerprint Module

(c). GSM Module

(d). Switches

(a). Arduino UNO Microcontroller:

Microcontroller forms the backbone of the system. During this system P89V51RD2 microcontroller is employed. It's an 80C51 microcontroller with 64 kB Flash and 1024 byte of information RAM. It's also In-Application Programmable (IAP), allowing the Flash program memory to be reconfigured even while the appliance is running. It drives the control logic behind every functionality, a number of which are mentioned below: • Power up or initialize it and its dependent molecules. • Check for interrupts, fault while the modules get initialize. • The command of fingerprint modules to function as a requested by a software interface. • Enable data transfer through the wireless.

(b). Fingerprint Module: There are many varieties of fingerprint module. they're optical, capacitive, piezo resistive ultrasonic, piezoelectric, RF, thermal, etc. An optical fingerprint sensor is employed during this system. This sensor read the fingerprint pattern. The scan image is converted into template and saved in the memory.

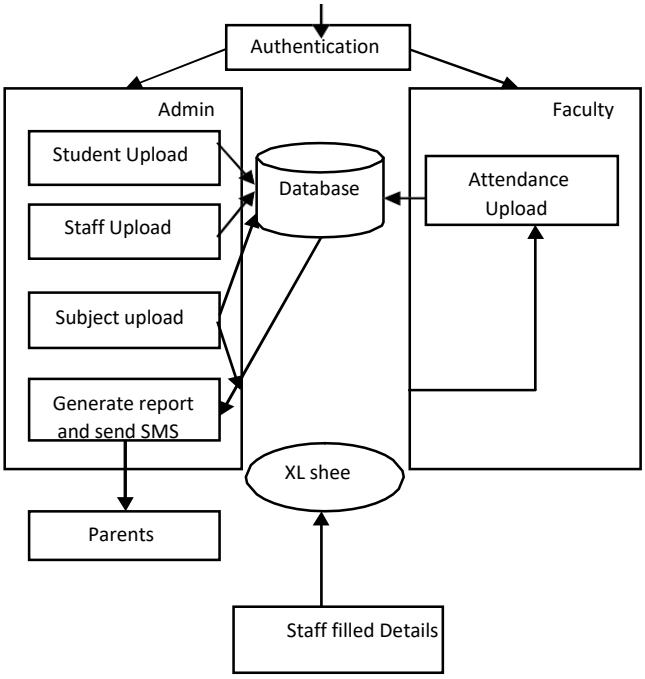
(c). GSM Module:GSM stand for Global System for Mobile Communication land is open for Digital cellular technology used for transmitting mobile voice and data services(TDMA). TDMA may be a technique within which server different call may share the identical carrier. Each call is assigned a specific interval. A GSM module may be a specialized kind of modem which accepts SIM card, and operates over a subscription to a mobile operator, rather like a itinerant. From the mobile operator perspective, a GSM module looks rather like a itinerant.

(d). Switches: Three switch switches are used for choosing different operating modes of the system. These switches are: • Enrolment switch • Matching switch • Deletion switch.

SYSTEM SOFTWARE DESIGN

DATABASE GUI: Hyper Terminal V1.5 is employed for creating the database of the system. Hyper Terminal presents ehe user witn a basic Graphical interface (GUI). Which highlight the core function of Hyper Terminal :Message box for displaying connection activity and standing,several minus, associates buttons and icons for several functions at the user's disposal.

SYSTEM ARCHITECTURE



The design is expressed in sufficient detail soon enable all the developers to grasp the underlying architecture of the attendance system.

RESULT OF PROJECT

The proposed system scanned the fingerprints placed on the device sensor and compared them against those stored within the data base successfully. The performance of the system was acceptable and would be considered for full implementation especially due to its short execution time and reports generation. Reports is easily generated within the proposed system so user can generate the report as per the necessity (monthly/weekly) or within the middle of the session. User can give the notice to the scholars so he/she become regular.

CONCLUSION

Biometric technology is an efficient tool to detect fraud and verify identity and also the prototype of fingerprint based attendance system using Lab view and GSM system is implemented. It provides an easy and value effective method of attendance monitoring in organization and academic institutions as compared to traditional methods of attendance management. The system is additionally user friendly as manipulation and retrieval of knowledge are often easily done through graphical computer programme. After enrolment of latest IDs within the system, the full process of marking the attendance is automated. it's concluded that using fingerprint based attendance system. most significantly implementation of such a system will help in saving the trees which are cut rapidly because of ever increasing demand of papers. The proposed system are often made wireless technology to transmit the attendance data to a centralized server. A mobile application or a web site are often assigned to access the system remotely. System are often modified to get the attendance performance graph of scholars automatically.

FUTURE SCOPE

• Student is often absent within four day or six days free voice call to call the college mobile number by using GSM technology.

• The system can be modified into an online based system so reports can be generated anywhere.

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