SMART ATTENDANCE SYSTEM

Sheetal Pawar[1], Rajay Jaiswal[2], Sudhanshu Labhasetwar[3]

Electronic and Telecommunication Engineering D.I.T.

Abstract

To enhance the university's monitoring system taking into account factors such as reliability, time saving, and easy control. The proposed system consists of a mobile RFID solution in a logical context. Radio Frequency Identification (RFID) based attendance system is ability to uniquely identify each person based on their RFID tag type of ID card make the process of taking the attendance easier, faster and secure as compared to conventional method. An automated attendance management software will not only make the entire process simple but will also provide a well structure and analyzed report of the pattern of student attendance and time management, which can further help in allocating and using the human resource in an organisation to the maximum possible benefit. The attendance management system provide the functionality of overall system such as displaying live ID tags transactions, registering ID, deleting ID, recording attendance and other minor functions.

Keywords— *LCD, RFID module, GSM, RFID tag, sensors, fingerprint scanner*

I. INTRODUCTION

Today the current framework for taking attendance is physically calling the roll numbers by the teacher himself and denoting the attendance. The most widely recognized methods for following student attendance in the classroom is by authorizing the students to physically sign the attendance sheet, which is typically passed around the classroom while the teacher is teaching the class. For example, speakers with a vast class may discover the bother of having the attendance sheet being passed around the class and the manual marking of attendance by students are troublesome and in all likelihood occupy them from educating and getting complete consideration from the students. Plus, as the attendance sheet is passed around the class, a few students may coincidentally or intentionally sign another student's name. The primary case prompts an student passing up a great opportunity their name, while the last prompts a false attendance record. Another issue of having the attendance record in a printed copy frame is that a speaker may lose the attendance sheet. As far as attendance examination, the instructor likewise needs to perform manual calculation to acquire the student's attendance rate, which regularly expend a great deal offtime. Another issue of having the attendance record in a hardcopy form is that a lecturer may lose the attendance sheet. As a consequence of that, lecturer can no longer trace the students overall attendance record throughout the particular semester. Currently, the magnetic card attendance system is widely used [1]. This pattern is flexible and practical. But it has also some disadvantages. For example, the card is easy to lost and damage. And most of all, parents are not aware if their children are absent from the class. Aiming at the disadvantages of traditional attendance system, a design method of wireless fingerprint attendance system based on GSM technology is proposed. In this system students report their attendance via biometric system and parents can receive SMS notification of attendance [2]. The fingerprint has a lot of advantages, such as unique, permanent, good anti-fake and easy to use. So it is recognized increasingly by people [3]. Figure 1 shows the general architecture of a biometric system [4].Biometrics systems work by recording and comparing biometric characteristics. When an individual first uses a biometric system, their identifying features are enrolled as a reference for future comparison. This reference may be stored in a central database or on a card (or both) depending on the needs of the application. When biometric recognition is required, the individual’s biometric characteristics are recorded again. This time however, the identifying features are compared by the system with the stored reference to determine if there is a close match.

II. LITERATURE SURVEY

In [1],"**RFID BASED ATTENDANCE SYSTEM**",T.S. Lim, S.C. Sim and M.M. Mansor, 2009 IEEE Symposium on Industrial Electronics and Applications (ISIEA 2009), October 4-6, 2009, Kuala Lumpur, Malaysia.

RFID can be used to take attendance for students in schools/colleges. Its ability to uniquely identify each person based on their RFID tag type of ID card make the process of taking the attendance easier, faster and secure as compared to conventional method. Students or workers only need to place their ID card on the reader and their attendance will be taken immediately. With real time clock capability of the system, attendance taken will be more accurate since the time for the attendance taken will be recorded. The system can be connected to the computer through RS232 or Universal Serial Bus (USB) port and store the attendance taken inside database. An alternative way of viewing the recorded attendance is by using HyperTerminal software.

In [2]"**SMART ATTENDANCE SYSTEM BY USING RFID**", M. K. Yeop Sabri, M. Z. A.Abdul Aziz, M. S. R. Mohd Shah, M. F. Abd Kadir, 2007 IEEE.

The paper describes the development Smart Attendance System (SAS) that will take an attendance by using information extracted from the RFID database handling system. In order to have complete system functionality, smart attendance system is needed to integrate with RFID database handling system. SAS will fetch the appropriate data from RFID database in order to execute the attendance taking process. Furthermore, SAS is also equipped with other rich additional modules to help lecturers and students in the class such as notes distribution and reminder.

In [3]"**An RFID Attendance and Monitoring System for University Applications**", A. Kassem (IEEE Member), M. Hamad (IEEE Member), Z. Chalhoub, and S. EI Dahdaah,, 2010 IEEE.

The main objective of this paper is to enhance the university's monitoring system taking into account factors such as reliability, time saving, and easy control. The proposed system consists of a mobile RFID solution in a logical context. The system prototype and its small scale application was a complete success. However, the more practical phase will not be immediately ready because a large setup is required and a part of the existing system has to be completely disabled. Some software modifications in the RFID system can be easily done in order for the system to be ready for a new application. In this paper, advantages and disadvantages of the proposed RFID system will be presented.

In [4]"**WIRELESS FINGERPRINT ATTENDANCE MANAGEMENT SYSTEM**", Maddu Kamaraju, Penta Anil Kumar, 2015 IEEE.

This paper presents the design methodology of a simple and high real time Zigbee - biometric system for easy and time saving attendance management using the finger prints of the employees at any organization along with the employee incoming and outgoing log maintenance. Firstly employee's fingerprints are scanned by software and an identity number is allotted as their enrollment. During the attendance time when employees impress their fingerprints, against the scanner, the system compares the new fingerprint patterns and the connection between various points in the fingerprint with the enrollment database. A match is recorded as a knock exercising acquisition, processing, transmission, matching. Through this automatic system, time and manpower is reduced to the great extent.

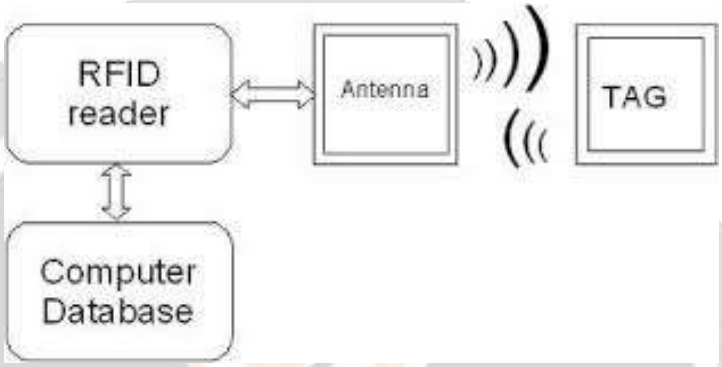
In [5]"**ATTENDANCE MONITORING IN CLASSROOM USING SMARTPHONE & WI-FI FINGERPRINTING**", Anand S, Kamal Bijlani, Sheeja Suresh, Praphul P, 2016 IEEE.

a novel attendance marking system with which students may mark attendance using their smartphones. While applying facial recognition via the smartphone's front camera to determine the student's identity, the system also makes use of the campus Wi-Fi network to determine the student's location. The proposed system does not require high monetary cost or specialized hardware and yet incorporates adequate foolproof measures to counter fake or proxy attendance. Experimental studies with our system show that fingerprinting, which is the technique used here to determine indoor location, can achieve very good positioning accuracy even in classroom environments, where signal interference is usually very high[5].

III. SYSTEM METHODOLOGY

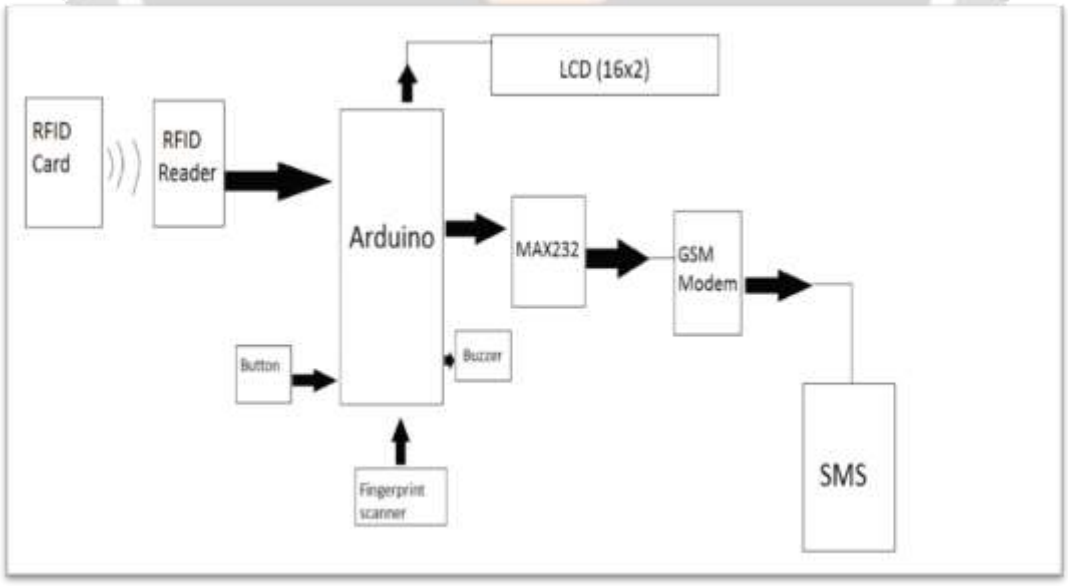
RFID Tag- An RFID tag is comprised of an integrated circuit (called an IC or chip) attached to an antenna that has been printed, etched, stamped or vapor-deposited onto a mount which is often a paper substrate or PolyEthylene Therephtalate (PET). The chip and antenna combo, called an inlay, is then converted or sandwiched between a printed label and its adhesive backing or inserted into a more durable structure.

RFID Tag

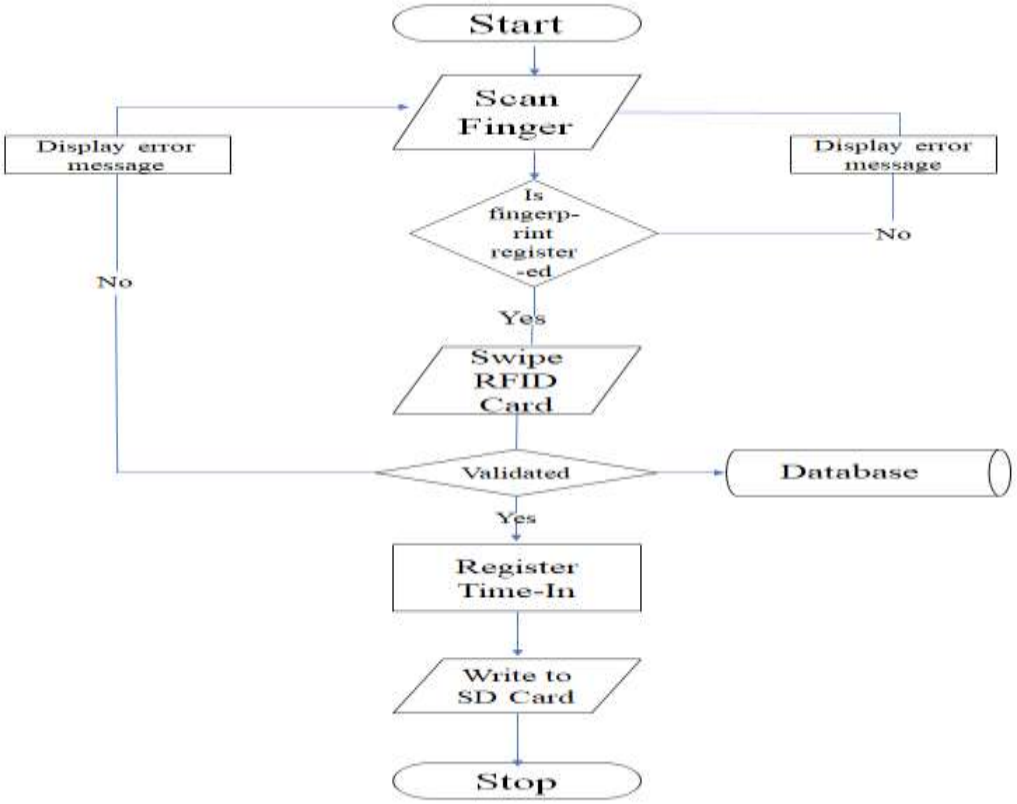


RFID READER

IV. SYSTEM DESIGN



V. SYSTEM ARCHITECTURE



VI. CONCLUSION

This project mainly comprised of development of attendance management system and fingerprint identification system. The main purpose of this project is to monitor the student attendance in lecture, tutorial and laboratory sessions in more efficient way and send this attendance to their parents.Attendance management is very helpful in saving valuable time of students and teachers, paper and generating report at required time.This system resists students from bunking classes through SMS sending feature to parents.

References

[1] 1.) "RFID BASED ATTENDANCE SYSTEM","T.S. Lim, S.C. Sim and M.M. Mansor", 2009 IEEE Symposium on Industrial Electronics and Applications (ISIEA 2009), October 4-6, 2009, Kuala Lumpur, Malaysia

[2] 2.) "SMART ATTENDANCE SYSTEM BY USING RFID", "M. K. Yeop Sabri, M. Z. A.Abdul Aziz, M. S. R. Mohd Shah, M. F. Abd Kadir", 2007 IEEE

[3] 3.) "An RFID Attendance and Monitoring System for University Applications", "A. Kassem (IEEE Member), M. Hamad (IEEE Member), Z. Chalhoub, and S. EI Dahdaah," 2010 IEEE

[4] 4.) "WIRELESS FINGERPRINT ATTENDANCE MANAGEMENT SYSTEM", "Maddu Kamaraju, Penta Anil Kumar", 2015 IEEE.

[5] 5.) "Attendance monitoring in classroom using smartphone & Wi-Fi fingerprinting", "Anand S, Kamal Bijlani, Sheeja Suresh, Praphul P", 2016 IEEE