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RFID Based Student Attendance Management System: A Review and an Approach

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Abstract: This paper presents an overview and an approach of RFID Based Student Attendance Management System. In this paper. after a brief introduction, the focus is on literature review wherein we have studied 15 papers related to the topic and have successfully analyzed them. On the basis of the literature review, we have proposed a system which will not only make the entire process simple, but will also provide a well-structured and analyzed report of the pattern of student attendance and time management, which can further help in allocating and using the human resources in an organization to the maximum possible benefit.

Keywords: RFID, student attendance management system, data mining

I. INTRODUCTION

The existing conventional attendance system requires students to manually sign the attendance sheet every time they attend a class. As common as it seems, such system lacks automation, where a number of problems may arise. This includes the time unnecessarily consumed by the students to find and sign their name on the attendance sheet; some students may mistakenly or purposely sign another student's name. Also the attendance sheet may get misplaced [1]. Having a system that can automatically capture student's attendance by flashing their student card at the RFID reader can really save all the mentioned troubles. This is the main motive of our system and in addition having an online system accessible anywhere and anytime can greatly help the lecturers to keep track of their students' attendance. Looking at a bigger picture, deploying the system throughout the academic faculty will benefit the academic management as students' attendance to classes is one of the key factor in improving the quality of teaching and monitoring their students' performance. Besides, this system provides valuable online facilities for easy record maintenance offered not only to lecturers but also to related academic management staffs especially for the purpose of students' progress monitoring [2-3].

II. LITERATURE REVIEW

Sr no	Ref .no, authors, years	Concept used	Claim by concerned authors
1	Darshan Kumar Dalwadi, Insiya Guriwala , Shiwangi Chaudhary	Keeping in mind imp of power saving	Reduces paper work, power saving concept system is economic with respective college. The project is helpful to remove all the outdated methods for making attendance and take in to account newly smarter method.
2	Arulogun. O. T. ,Olatunbosun, A. Fakolujo O.A, Olanyi O.M	In this we study it capable of eliminating time wasted during manual collection of attendance and for the educational administration	In this method we have utilized the veracity of RFID implementing functions and automatic student course.
3	Elima Dugar,Vaskar Deka,Abdul Hunnan	This paper elaborates the implementation of RFID based student attendance management system using open source software in a multisource environment	The object is built and open source based RFID attendance management system which increases performance and efficiency was successfully achived.

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4	Priyanka Sahare, Pranjali Gaikwad,Snehal Nanele,Nutan Thakare, Puja Chandeka	This paper elaborates the implementation of RFID based student attendance management system using open source software in a multiuser enviornment.	This reasearch definitely promises and increases effectiveness and improve efficiency for busness efficiency.
5	Unnati A Patel, Dr Swami Narayan,Priya R	In this paper problem of student attendance management is defined which is traditionally taken manually by faculty	RFID will take auto attendance for all students enter in class which will remove the tim less of professor.
6	Ankita Agrawal, Ashish Bansal	Attendance can be recorded in many ways such as using web based ,web wide accessibility ,web based attendance is most commonly attendance system avaliable.	Web service for management system in which we have work on the basis of prsence of scanning the QR code with scanne.
7	Pushpa S Gagare, Priyanka A Sathe, Vedant T Pawaskar, Sagar S Bhave	In this paper using RFID reader and passive RFID chips and tag the monitor to students.	The system can reduces manpower .our system is very easy to handle.
8	Anusha V Pai, Atul Krishna , Kshama PM,Menita Correa.	Attendance can be recorded in many ways such as using web based ,web wide accessibility ,web based attendance is most commonly attendance system avaliable.	Web service for management system in which we have work on the basis of prsence of scanning the QR code with scanner.
9	Nurbek Saparkhojayev And Seli Guvercin.	In this paper decide to create a system that makes easier to check attendance automatically.	Author shows how system relying on RFID techn ology may be developed.
10	Shashank Shukla, Shailee Shah,Pooja Save	The attendance management system provides functionalities of the oveall system such as displaying the id tags.	The project has provided a convinient method of attendance marking compared to the traditional method of attendance.
11	Krenare R Pireva, Jeton Siqeca,Shkelqim Berisha	In this paper we propose a new idea how we can track the attendance of our students in an automatic manner by using this technology in an education institution environment	to overcome all this trouble with time consuming, this paper has presented a good solution web application using RFID technology for attending student classes.
12	Abdul Aziz Mohammed , Jyoti Kameswari	The system can be easily accessed by the lecturers via the web and most importantly, the reports can be generated in real-time processing, thus, providing valuable information about the students'.	The system promotes a semi-automated approach in capturing the student attendance, i.e. by having the students to flash their student cards to the RFID reader
13	Moth Moth Mymt Thein, Chaw Myat Nweand Hla Myo Tun.	the system is developed by the integration of ubiquitous computing systems into classroom for managing the students' attendance using RFID and fingerprint reader.	From a proper analysis of positive points and constraints on the component, this system can be safely concluded that the product is a highly efficient GUI based component. This application is working properly and meeting to all user requirements.
14	Ononiwu G Chiagozie, Okorafor G Nwaji	Radio-frequency identification (RFID) is a technology that uses radio waves to transfer data from an electronic tag, called RFID tag or label, attached to an object, through a reader for the purpose of identifying and tracking the object	Finally, this attendance system can be improved by adding a feature where the attendance system indicates when an employee or a student is late for work or classes as the case maybe.

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15	Aniket S Tiwar I,S.G.K.Shiekha, N.M.Ade , N.R.Tolwani, A.S.Tiwari, L.N.Pawar	The paper reviews various computerized attendance management system. In this paper basic problem of student attendance management is defined which is traditionally taken manually by faculty.	This paper presents an analysis of different technologies which are used for attendance making system. Traditionally student attendance is taken by professor and it will waste too much time of lecture

III. POSSIBLE APPROACH

Since the system is based on RFID, we do have some hardware component in the application. To keep the project simple and more software based, we are not designing any hardware architecture to the software system. We are going for basic hardware used as an interfacing device to read the data from the card and store it on application's database. The task of the scanner is to read a ten-digit unique RFID tag and feed it to any display device or visible fields on the screen. So each card has a film with a 10-digit unique RFID and the number is printed on the card itself for recognition purpose, as shown in Figure 1.

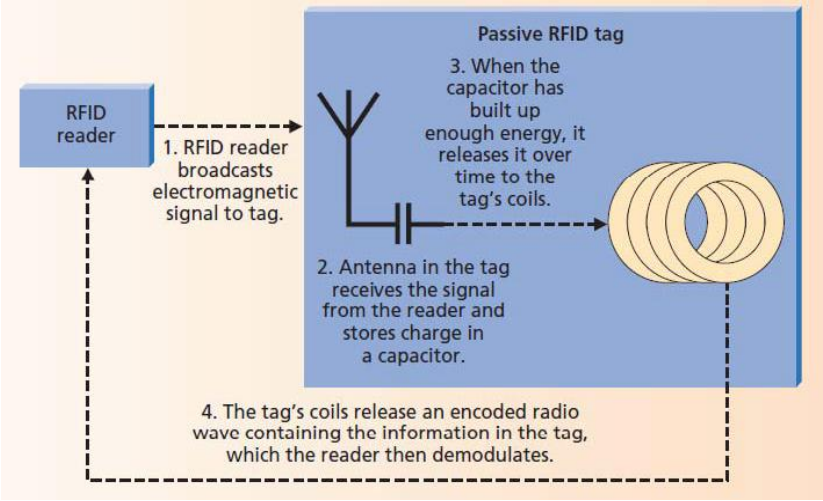

Fig. 1: Simplified view of data transfer in low frequency passive RFID tags

The application is a web based application. So when we deploy it will have a server where all the web pages reside. All the data is stored in the database. The Client accesses this data using internet. The database is accessed via Server and the application works in the browser. To access the application in the browser, the user must have a valid RFID card (which is analogous to the one shown in the diagram above) and he needs to swipe it in front of the RFID Scanner. The block diagram of system is shown in Figure 2. RFID Scanner being plug and play can be replaced very easily without affecting the current application and there would be no data losses as there is no hardware storage involved in terms of the RFID Scanner. Moreover, the RFID Scanner and the cards are cost effective.

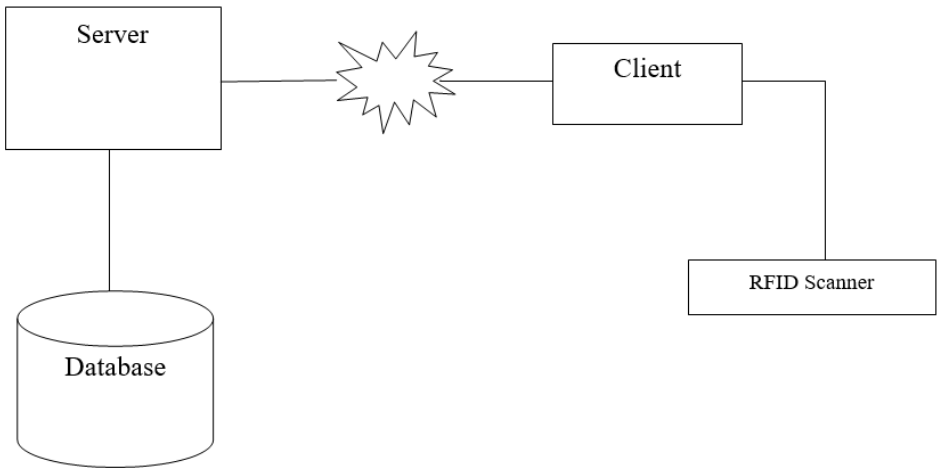

Fig. 2: Block diagram of Proposed System

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IV. CONCLUSION

In this paper we have analyzed 15 papers based in RFID based student attendance system. Based on the studied literature, we have found that there is still scope of improvement in the said system. In terms of performance and efficiency, this project has provided a convenient method of attendance marking compared to the traditional method of attendance system. By using databases, the data is more organized. This system is also a user friendly system as data manipulation and retrieval can be done via the interface, making it a universal attendance system. Thus, it can be implemented in either an academic institution or in organizations.

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BIOGRAPHY

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