College Access and Student Attendance using 'RFID' technology.

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Abstract——**Now-a-days radio frequency identification is an integral part of day to day life which allows productivity and convenience.This RFID system is used in many application for educational,shopping malls,traffic campus access. In this system we are implementing RFID system for attendance and gate access of campus[5]. Also single RFID card is used for multiple applications such as class room attendance,lab,exam hall,transport,health care,hospitality and industry[7]. Earlier,attendance is taken manually. This is time consuming processand also inefficient for faculty.Due to this valuable time of student as well as faculty is wasted. Also,accurate attendance is not taken by faculty and proxy attendance is always a problem in many educational institute. By usingRFID system we are able to eliminate wastage of time [7].By using this automatic RFID system,we obtain safe campus and secure environment. By this system we can precisely monitor on identification of person who enter the college gate or inside college [6].Thus this system satisfies our aim of automatic attendance and college access using RFID. The students and faculty members should have their respective smart card. The system works on scanning the RFID card which is read by the reader and the information is tallied and updated in the database.This system results in more convenience,safety and efficiency to educational institute.**

Keywords——**RFID technology, campus access, student identification, student attendance.**

I.   INTRODUCTION

Radio Frequency Identification (RFID) based attendance system is used to take the attendance of students or employees in any college or university or company. To take attendance, RFID card has to be shown in front of the RFID reader, then the attendance of the respective person is noted down in the microcontroller memory.

Most educational institutions are concerned about student security. The conventional method of attendance management and allowing gate access to students inside a college/educational campus is by showing photo I-cards to security guard.It is very time consuming and insecure, hence inefficient.

RFID does not require anyline of sight for its functioning. The identification process and the attendance records are automatically updated in their respective databases.

This system can be used for attendance management and to allow gate access for student in school, college, and university. It can also be used to take attendance for workers in working places. It has ability to uniquely identify each person based on their RFID tag type of ID card.This make the process of allowing gate access and attendance management easier, faster and secure as compared to conventional method. For this system, Students or workers only need to place their ID card on the reader and they will be allowed to enter the campus.

Radio Frequency Identification (RFID) based security system is one of the solution for this problem.A typical RFID system made up of three components -tag, reader and host computer. Benefits of RFID are -no line of sight is required to read a RFID card/tag,multiple RFID cards can be read,reusable for other purpose. Due to these advantages in our application we used RFID system.

II.   LITERATURE REVIEW

RFID is the acronym for Radio Frequency Identification, which is an automatic identification technology .It is used for to retrieve and store data on to RFID Tags without any physical contact [1]. An RFID system typically consists of RFID Tags, RFID Reader and database management system. The tags may be either passive or active [2].Through its antenna, RFID reader reads the information stored on these tags. For the RFID operation frequency of the reader ranges from 125 KHz – 2.4 GHz [3]. One of the advantage of RFID system is that, Line of sight is not essential for reading the tags with the reader, therefore, it requiremuch less human handling to be read and processed. The working principle of our system is, when students who have RFID tag passes through the door of classroom, RFID reader will read the EPC (Electronic Product Code) of RFID tags, and then this EPC will be displayed on LCD and it will be sent to PC. After checking database to get required information of the student, the attendance of students will be stored in microcontroller memory [4].
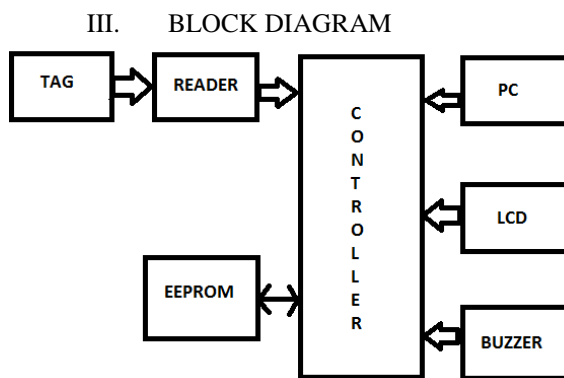
III.   BLOCK DIAGRAM

Fig.1 Block diagram of proposed system.

Hardware required are:-

i.   Microcontroller AT89C52
ii.   RFID tag
iii. RFID reader
iv.   EEPROM
v.   Personal computer
vi.   LCD
vii. Buzzer

The TAG is scanned by the READER. The EPC code is sent to CONTROLLER. This is done by the serial port pin called MAX RS 232. The CONTROLLER is used for controlling the processes required in the system. As shown in the above figure the CONTROLLER is been interfaced with many devices such as secondary memory EEPROM, PC, LCD. The information of the respective EPC is entered / updated in the database of the server PC. This transfer of information from CONTROLLER to PC is done by TCP/IP. The EPC code is been displayed on the LCD. BUZZER is used to indicate that scanning of TAG is completed by the READER. As the PC may be off due to certain reasons like power cut etc. the information to be updated is temporary stored in the secondary memory EPROM. Later this information is stored in the PC is turned on.

IV.   PROPOSED SYSYEM

The system proposed states two simple uses of the RFID smart card. The two important college activities of student identification which is related to security of-course and also the manually taken attendance is been automatically carried out. This system does not require any high performance microcontroller such as ARM series. It is done using a low cost microcontroller which indirectly reduces the cost of the total system. This system is also useful for co-workers in industries.

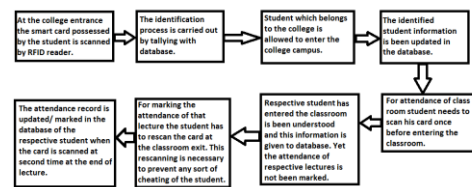### V.   FLOW OF THE SYSTEM

Fig.2 Flow chart of the system.

VI.   ADVANTAGES

i.   The paper records are saved for maintaining the attendance records.
ii.   The time is saved in the lectures for taking attendance.
iii. The security is tightened by this automatic RFID system.
iv.   Safer grounds enhances healthier surroundings.

VII.   CONCLUSION

RFIDsystem is a versatile technology.This system is used in many application and real time application. In our application RFID system gives accurate and timely attendance of student and avoid the wastage of valuable time of student and faculty. In case if any student is absent for many days, daily absentees is reported to educational management .The Entry of person is identified by RFID system for a proper and accurate attention of campus. This system has capability of RFID to receive,store and forward information to PC in case if there is no electricity .To obtain best performance the RFID readers and Tags must be in good quality.

VIII.   REFERENCES

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131