

RFID Based Attendance System

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Abstract- Now a days due to easy availability of all the information on the internet, students are less motivated to attend the classes, due to which most of the students are unable to maintain minimum attendance. This work is to simplify attendance recording system by using Radio Frequency Identification (RFID) technology. RFID based Attendance recorder with SMS alert System is a web-based application that will be developed to overcome the above stated problem. The system will be developed by using GSM (Global System for Mobile communication) technology and database support. The information from RFID Database handling System will be used for taking attendance and for sending SMS alert also. This System interacts with Guardians by sending message. Therefore, the system functionality does not only record the student attendance but also sends an alert SMS to their Guardians when the student enters or exits.

KEYWORDS: RFID Attendance Systems, Attendance with SMS alert, Student attendance with RFID, Attendance system, RFID system.

Introduction:

Most of the institution administrators are worried about student's irregular attendance. Absenteeism can affect student's whole academic performance. The ordinary method of taking attendance by calling names or signing on paper is very time-taking and insecure, and also this method is inefficient. Radio Frequency Identification (RFID) based attendance system is one of the solutions to label this problem. This system can be used to take attendance for student in school, university and college. It also can be used to take attendance of no. Of workers present in working places. Its ability to uniquely identify each person based on the code present for every RFID tag type of ID card make the process of taking the attendance easier, faster and secure as compared to ordinary or traditional method. Students or workers only need to place their ID card on the reader and their attendance will be taken immediately. With actual time capability of the system, no. Of attendees taken will be more precise since the time for the attendance taken will be recorded. The system can be connected to the computer using RS232 or Universal Serial Bus (USB). port. It stores the data of attendance taken, inside the database. Another way of viewing the recorded attendance is by using hyperterminal software. A framework of the system has been successfully fabricated.

Literature Survey:

RFID- Based Intelligent Security System for School Children.

Arvind Bharathwaj, Navaneeth Krishnan, Sharat Sundaram, Shri Harish P, Venkat Prashanth, Gayathri, Rajthilak, Sundar Ganesh. The main objective of this project is to develop a security system for school children. At present, there is no effective security system available for school children. This can be used to protect children from being kidnapped by unknown persons with the help of RFID (Radio Frequency Identification) and GSM modules. It consists of a micro controller, an RFID reader, RFID tags, GSM module, LCD screen.. The RFID reader will be interfaced with the micro controller. Whenever a student enters or exits the school, the RFID reader will read the tag of the particular student and send a signal to the micro controller. The micro controller after receiving the signal will send a control signal to the GSM module where the mobile numbers of the parents are stored. The GSM module in turn, will send an SMS (Short Message Service) to the respective parent.

RFID-based System for School Children Transportation Safety Enhancement with Attendance System by

Aafiya Hanafi, Sana Patha, Shraddha Malik, Ruhisana Ali, Akbar Nagani. This project presents a system to monitor pick-up/drop-off of school children to enhance the safety of children during the daily transportation from and to school. The system consists of two main units, a bus unit and a school unit. The bus unit the system is used to detect when a child boards or leaves the bus. This information is communicated to the school unit that identifies which of the children did not board or leave the bus and issues an alert message accordingly. The system has a developed web-based database-driven application that facilitates its management and provides useful information about the children to authorized personal. A complete prototype of the proposed system was implemented and tested to validate the system functionality. The results show that the system is promising for daily transportation safety.

Problem Statement:

At the moment, most of the attendance systems that are being used in universities still are written a piece of paper. For classes, tutorial and laboratory session the student still have to sign the signature on the attendance sheet. This method is not flexible because the risk of losing the attendance data is very high. If the attendance sheet is missing, the attendance data will be lost. Other than that, unethical problem may be occurring such as cheating in signature. For example, a student does not attend his class but his attendance form has been signed by other student. This system is proposed to overcome these problems. Besides that, since the proposed system also record the time, the lecturer can monitor the punctuality of the students too. The traditional method of

monitoring has some drawbacks. This method obviously not efficient as it wastes the user's energy and quite slow in term of completion. For example, a class that uses attendance sheet method requires the Students to pass the sheet to each other to sign up the monitor. If there is a large amount of students, it will take time in order to complete the monitoring. Besides that, there is possibility that some students might miss their turn to sign the attendance as they did not receive the attendance sheet. Also in barcode system during reading symbol most of the data are lost and it is a time consuming system.

Proposed approach:

The propose of this system to take attendance of students through RFID tag and RFID Reader. in this machine GSM machine also included to send message to their discern. therefore this propose gadget gives ensurity to parent that, weather the child attending the class or bunk the magnificence. This proposed machine additionally includes the switches to display the day and time desk. The main motive in the back of this device is to lessen human efforts, Paper paintings or lessen the time.

Methodology:

First of all connect Arduino Board, GSM Module and RFID Module will have to be connected to each other as per the given circuit diagram. After making all of the connections of attendance gadget, give the power supply into the circuit. The LCD in the Arduino board will show with the result, (please swipe the card). The statistics stored within the RFID tag is said as the id and attendance of the pupil. While the student shows the RFID card in front of the RFID reader, it reads the statistics and matches with the information stored inside the microcontroller. The microcontroller is pre-programmed with embedded C programming language period. While a person positions their RFID tag onto RFID reader then RFID reader reads tag's information and ship it to microcontroller after which microcontroller compares this facts with described information or records. If data is matched with described information then microcontroller increment the attendance with the aid of one of the tag's owner and sends the message with the help of GSM Module installed to the registered mobile number and if matched doesn't take place then microcontroller shows invalid card on LCD module.

Applications:

- e-Payment
- e-Toll Road Pricing
- e-Ticketing for Events
- e-Ticketing for Public Transport
- Access Control
- PC Access
- Authentication
- Printer / Production Equipment

Advantages:

The project is based on digital and easiest method which will make the work of the teachers effortless and also reduce the worries of the parents.

It will also help students get knowledge of network systems.

This project will also ensure the safety and security of the students.

Disadvantages:

As nowadays , many campuses are being setup in the where the network latency is a big issue, The project will not work completely if there is any network issue.

Requires a SIM with an active SMS service which increases the maintainance cost.

Objectives:

The main objective of this project is to develop a security system for school children. At present, there is no effective security system available for school children. This can be used to protect children from being kidnapped by unknown persons with the help of RFID (Radio Frequency Identification) and GSM modules. It consists of a micro controller, an RFID reader, RFID tags, GSM module, LCD screen. Here a RFID tag will be issued to each school children with their ID card. An RFID reader will be fixed at the entrance of the school or a particular class room. The RFID reader will be interfaced with the micro controller. Whenever a student enters or exits the school, the RFID reader will read the tag of the particular student and send a signal to the micro controller. The micro controller after receiving the signal will send a control signal to the GSM module where the mobile numbers of the parents are stored. The GSM module in turn, will send an SMS (Short Message Service) to the respective parent.

Conclusion:

In this project, we have implemented a concept of intelligent security system for school children with the help of RFID. Identification has become a necessary process in almost all fields. Now days, all works are done by automation. Automation inventions all are concentrated on the main theme that is to reduce human effort and effective utilization of time. Our project is also implemented to reduce the man power in the identification. Due to this, accuracy of identification is maintained RFID card reader; the reader reads the information of student i.e., entering or exit. The controller gets information from RFID card reader and sends the SMS to pre-stored parent's mobile no. The controller gets communicates with GSM modem serially using MAX 232 serial

driver. The SMS is sent with the help of GSM modem (Modulator/Demodulator). Here the time and date maintained by using a Real Time Clock circuitry. So finally the parent gets the information about their children's attendance.

Future Scope:

A hex key pad can be interfaced to microcontroller board by which user can enter his password then only the lock can be opened. This ensures even if someone has card then also without the password he can't get access. Connection to PC and development of PC side software to read from microcontroller. Implementing the security systems with different levels by using different types of mifare cards. Cryptanalysis of the link between the card and reader. Study of other RFID techniques for better service and security. Interfacing the system with a GSM so that data can be transmitted through messages.

Expected Output:-



The above image shows the output of the message sent when RFID tag is scanned on the module. This gadget gives an effective and more handy technique of taking attendance when in comparison to the guide machine. The gadget is user pleasant. Information manipulation and retrieval is accomplished through the graphical interface. The system may be implemented in any academic organization.

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