ISSN:2229-6107

INTERNATIONAL JOURNAL OF PURE AND APPLIED SCIENCE & TECHNOLOGY

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www.ijpast.in

INTERNATIONAL JOURNAL OF PURE AND APPLIED SCIENCE & TECHNOLOGY
IJPAST

ISSN: 2229-6107
www.ijpast.in
Vol 13,Issue 3.Aug 2023

RFID BASED SYSTEM FOR SCHOOL CHILDREN TRANSPORTATION

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ABSTRACT:

RFID is a nascent technology, deeply rooted by its early developments in using radar 1 as a harbinger of adversary planes during World War II. A plethora of industries have leveraged the benefits of RFID technology for enhancements in sectors like military, sports, security, airline, animal farms, healthcare and other areas. In this proposed system, authorized students are given an RFID tag. Thus, the data stored in this card is referred as the identification/attendance of the person. Once the student places the card in front of the RFID card reader, it reads the data and verifies it with the data stored in the microcontroller from the 8051 family. If the data matches, then it displays a message on the LCD confirming the entry of that student else displays a message denying the attendance. The status of a student's attendance can be retrieved from this system by pressing the status button interfaced to the microcontroller. Hence, a lot of time is saved as all the students' attendance is directly stored in the database.

Keywords: GSM, GPS, Switch, Buzzer.

1. INTRODUCTION:

The concept "Internet of Things" (IoT) has recently attracted growing attention from both academia and industry. IoT is a scenario where devices (even animals or people) are provided with unique identifiers and the ability to automatically transmit data over a network without requiring human-to computer interaction [1]. IoT is a scenario where devices (even animals or people) are provided with unique identifiers and the ability to automatically transmit data over a network without requiring human-to computer interaction. RFID forms an essential block of IoT where RFID devices are wireless microchips used for tagging objects for automated identification [2]. Student attendance is an essential part of daily teaching. Traditionally, teachers bear the mission of calling the class names. Consequently, this consumes time, and also does not have any flexibility in generating reports or statistics.

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ISSN: 2229-6107
www.ijpast.in
Vol 13,Issue 3.Aug 2023

To get rid of the manual attendance process, represented by paper sheet signatures, researchers have proposed many technologies that include barcode based attendance systems, face recognition, and fingerprint identification. However, these systems suffer from some hindrances and difficulties [3]. The most common method of tracking student attendance systems is to take a roll call or sign the attendance sheet which is done manually. For a classroom of larger strength, both the methods are cumbersome. The roll call method is easily prone to fake attendance in a classroom of large size and it also takes a longer time to call the names of all the students [4]. The significant problems also arise when it comes to the transformation of the paper-based data to an electronic form to be used in student electronic records for calculating the total attendance at various levels (e.g. subject, study program, faculty or university) [5]. In addition to all the aforementioned disadvantages, the most common disadvantage is that all these methods need extra equipment. A proposed system has been developed to address these disadvantages. The main advantages of the proposed system are flexible usage, no equipment costs, no wasted time, and easy accessibility [6]. The classroom attendance system is based on face recognition technology, combined with RFID technology. It realized the identity confirmation of the students in the class effectively. Through the real-time test of the algorithm, it fully meets the requirements of the attendance time in the class, reduces the attendance cost of the classroom, and effectively solves the problem of signing and other issues [7]. For web-server platforms, XAMPP software is used. XAMPP is the software that has complete PHP, Apache, and MySQL web development environments. XAMPP software is a free and open source web-server for local development of web-based applications. SQL is a special purpose programming language designed for managing data held in a relational database management system. The mySQL tool in XAMPP is PHPMy Admin. To store the unique ID in the student card, mySQL is required. In mySQL, four tables have been created, that consists of staff table, student table, student attendance table and student marks [8].

2. LITERATURE SURVEY

The Internet of things (IOT) is the main achievement to reduce the human working and by based on IOT , create solutions for different problems which were not solved in normal technologies . It can interrelated to mechanical and digital machines , ability to transfer data from human to human , human to machine by using the related sensors . The IOT allows objects to be sensed or controlled remotely across existing network infrastructure , creating opportunities for more direct integration of the physical world into computer-based systems, and resulting in improved efficiency, accuracy and economic benefit in addition to reduced human intervention. IoT is a dynamic global network organization with self configuring capabilities based on standard and interoperable communication protocols In the IoT, physical and virtual things have identities, physical attributes, and virtual personalities and use intelligent interfaces The physical and virtual things‖ are seamlessly integrated into the information network RFID is shaping up to be an important building block for the Internet of Things (IoT). RFID (Radio Frequency Identification) devices are wireless microchips used for tagging objects for automated identification RFID systems consist of a reading device called a reader, and one or many tags the reader is a powerful device with ample memory and computational resources RFID can identify objects wirelessly without line-of-sight. . Attendance system will produces an automatic system which give better routine and efficiency than the traditional method of observing student. Furthermore, RFID technology can help to identify and to monitor items (products, people, student etc) wirelessly within a specified distance (a few centimetres to hundreds of meters). In this paper, we describe the

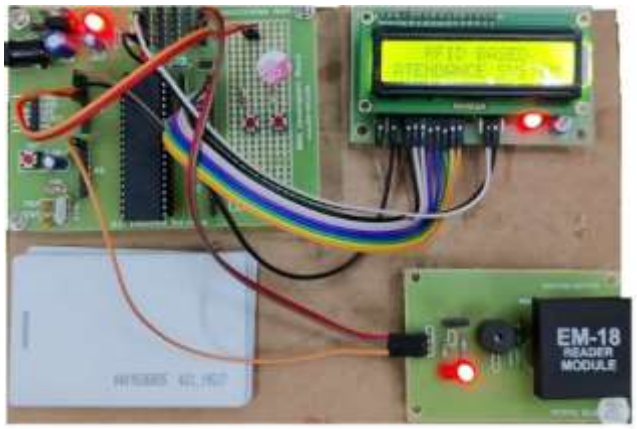
INTERNATIONAL JOURNAL OF PURE AND APPLIED SCIENCE & TECHNOLOGY
IJPAST

ISSN: 2229-6107
www.ijpast.in
Vol 13,Issue 3.Aug 2023

proposed RFID system for recognizing and monitoring attendance. In this system, the RFID tags enable the school/college management people to supervise the student movement in and out of the campus. When RFID tags pass through the RFID reader in read range zone, then system will record the data from the RFID tags to the database systems. Have caused students to be less motivated to come to the lecture rooms than ever before. Laziness on the part of students, nonchalance to school work, extra social activities that have no importance in aiding the objectives of the institution and a lot more, may prevent students from attending lectures. Sequel to these, lecturers and administrators in most developing countries have had to come up with ways to ensure a healthy participation from students, and make sure that the student lecturer interactive relationship is kept intact. This in some cases have come in simple forms like roll calls, while in more interesting cases, can be formats like surprise quizzes, extra credit in class, etc. These strategies are however time consuming, stressful and laborious because the valuable lecture time that could otherwise been used for lectures is dedicated to student attendance taking [8] and sometimes not accurate.

3. METHODOLOGY

In our project RFID Based Attendance System using Arduino, RTC & LCD Display. Here Arduino UNO acts as a central processor for controlling all other components as an input/output unit. We have used a 5 volt power supply to power all the components used in this project. RFID Reader module is interfaced with Arduino to read the data from RFID Card/tag. Real Time Clock Module DS3231 is used to display the current time and date on the LCD as well as arriving and leaving time of the users. LCD displays every output like current date & time, information of users, no of staff present or absent and menu options from 1 to 4. Red & Green LED is used for the indication of arriving and leaving. Similarly buzzer produces sound whenever the interrupt is detected. The very important part of this block diagram is the EEPROM part. EEPROM stands for Electrically Erasable Programmable Read Only Memory. It stores the data whenever the users swap the card over the RFID reader.



In this section, we identify some limitations and discuss future plans for our system. For this prototype, due to laboratory limitations, we invited just five volunteers to participate in our experiments and evaluated the system performance on this basis. However, when the number of people is increased, the detection accuracy may be affected. This is because the more people there are; the more likely they are to have similar body features, which will require that we obtain more refined features. In addition, real-time capability may also be a key consideration for further enhancing the robustness of our system.

CONCLUSION

ISSN: 2229-6107
www.ijpast.in
Vol 13,Issuse 3.Aug 2023

Our goal is to develop a secure, portable and ready to deploy RFID-based attendance. The system provides a practical and efficient solution for monitoring student attendance on a large scale. The proposed attendance monitoring system uses the concept of IoT to log and fetch data on the server/cloud and make it available for the user anytime and anywhere. For future work, we would also like to give access to students about their attendance, so they can log in and check their attendance remotely. We would integrate the entire system with a mobile phone application so that all functionality is o the mobile itself. Also, we would like to integrate this system with Canvas or Blackboard using XML interface

Future Scope:

Through this process, we designed this device to reduce the man power and it helps any institute to manage their data of every time. Hence the project is reliable to IOT platform with available components. It is late weight to place it in the any where

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