

# RFID BASED ATTENDANCE SYSTEM

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## ABSTRACT:

In early days, Most of the educational institutes are worried about students irregular attendance. An attendance management system using students identification card with IC chip has been proposed and implemented in several universities. Even those system work well, there are obstacles to install them to other institute such as an initial cost & modification cost for pre-installation. Radio Frequency Identification (RFID) based attendance system is one of the solutions to overcome this problem. Its ability to uniquely identify each person based on their RFID card make the process of taking the attendance easier, faster and secure as compared to conventional method. Person only needs 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.

## INTRODUCTION:

The method of taking attendance by calling name is very time consuming for offices, by taking attendance by signing on paper is insecure hence inefficient . This paper described the utilization of Radio Frequency Identification (RFID) and Arduino technology. This implementation consists of hardware and software system. This RFID based attendance system has a storage system that store the unique identification number of the student/employee and also the attendance system is very user friendly for commercial

purpose. In this project, we designed a system to record the attendance using RFID technology which will be time efficient.

The main objective is to make a system that will take the attendance of authorized individuals, record the data along with time and date and store in server, and finally send the data to Thingspeak channel (an API application) at the end of the day using Wi-Fi connection. We worked with both hardware and software parts in order to serve our objective. Each user will be given an individual RFID tags and its record will be maintained.

## THEORY:

The main goal of the system is to detect the presence or absence of any person in an educational institute/organization. RFID technology works by mainly with the RFID Reader, and RFID cards. The RFID cards have a unique identification number and that is one of the main benefits of the system as this makes the system very reliable. The card saves the personal details of the user across its identification number. Since the card saves all the personal details of the user, there has to be very high security system to secure the information. This privacy issue resulted in standard specifications development that addresses privacy and security issues.

In this project we used EM18 reader which is basically a RFID reader, used to read RFID tags of frequency 125 kHz. After reading tags, it transmits unique ID serially to the ThingSpeak.EM18 RFID reader reads the data from RFID tags which contains stored ID which is of 12 bytes.

Aurdino is also gonna used here. Arduino is an open source programmable circuit board that can be integrated into a wide variety of makerspace projects both simple and complex. By responding to sensors and inputs, the Arduino is able to interact with a large array of outputs hence we can say it as a medium of connecting software and hardware.

where we can retrieve data anywhere in the world.



Fig1: Aurdino

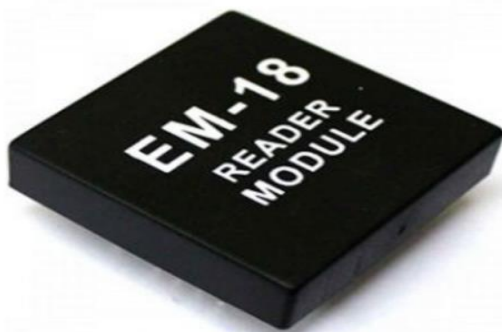


Fig2: EM18 Reader

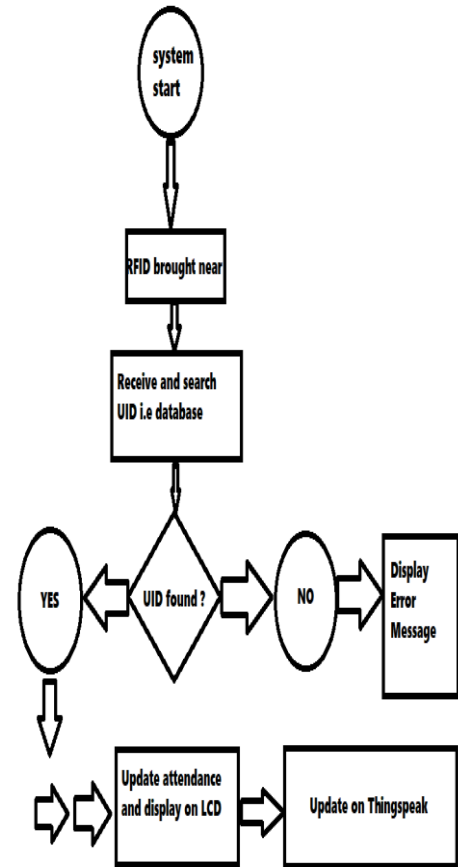


Fig3:- Flow chart of the system

### RESULT FROM ThingSpeak

In this section, we discuss the outputs of the system. We can retrieve the entries from Thingspeak webpage where there is a part from where we can export data.

### PRINCIPLE OF OPERATION:

The system initially starts when the user RFID card is brought near the RFID reader. From the RFID reader, it receives the unique ID of the user and starts to search this Unique ID in the system database. Here IR sensor will sense after the Unique ID is found RF reader, then within few second students have to enter. If after receiving unique ID student fails to enter in the class within few second then process will unsuccessful his attendance won't count. If the process is successful then user's attendance is updated and displayed on the LCD display. However, if the Unique ID does not match then display error is shown. Finally the whole data is saved in an SD card. Later on Thingspeak is activated by login to a Thingspeak account. Here all the entries are automatically updated in the field graph from



Fig 2:- View from ThingSpeak Channel

Above figure shows graphical representation of attendance on ThingSpeak. This output is on the scale of 0 to 100 where 0 indicates the absence of student similarly 100 indicates presence of student.

When we are clicking on the export/import button on the Thingspeak webpage, an excel sheet file automatically gets downloaded with all the real time update of the entries. Thingspeak offers real-time data collection so the student ID and time both can be retrieved from the excel file from anywhere with internet access.

## BENEFITS OF RFID

It serves mainly two purposes. Firstly, to record attendance along with time of entry and time of leave and secondly its work is for authentication and authorization purpose. At present, this system is taking over schools, hospitals, industries etc. The RFID card is actually a transponder which transmits information through radio frequency. In the card, necessary information of the user is stored.

## CONCLUSION

This paper has presented the successful design and implementation of an automated attendance recording system utilizing the advantages of the RFID technology. This system has the potential of saving a lot of time and manpower in running any institution. It is a very efficient system at a very affordable price. Along with its advantages of reduced cost and simplicity.

## REFERENCES

1. "Web-based Laboratory Attendance System by integrating RFID-ARDUINO Technology" by faculty of electrical engineering university technology MARA 40450 Shah Alam, Selangor, Malaysia.

2. "Simulation of Attendance Application on Campus based on RFID (Radio Frequency Identification)" by Dania Eridani & Eko Didik Widiyanto Computer Engineering Diponegoro University Semarang, Indonesia.

3. "RFID Based Attendance System" by T.S. Lim, S.C. Sim and M.M. Mansor Faculty of Engineering and Technology, Multimedia University, Jalan Ayer Keroh Lama, 75450 Melaka, Malaysia.

4. "An Adaptation of the Web-based System Architecture in the Development of the Online Attendance System." Mahfudzah Othman & Siti Nurbaya Ismail Faculty of Computer & Mathematical Sciences Department of Computer Science Universiti Teknologi MARA, Malaysia.

5. "Attendance Management System" Shailendra<sup>1</sup>, Manjot Singh<sup>2</sup>, Md. Alam Khan<sup>3</sup>, Vikram Singh<sup>4</sup>, Avinash Patil<sup>5</sup>, Sushma Wadar, Electronics and Telecommunication Engineering Department, Army Institute of Technology, Pune, India.

6. "An attendance management system using students identification card and android management." Tsuyoshi Usagawa, Yuhei Nakashima, Yoshifumi Chisaki, department of computer science and electrical engineering, Kumamoto University, Japan.

7. "SMART ATTENDANCE SYSTEM BY USING RFID" M. K. Yeop Sabri, M. Z. A. Abdul Aziz, M. S. R. Mohd Shah, M. F. Abd Kadir Fakulti Kejuruteraan Elektronik dan Kejuruteraan Komputer Universiti Teknikal Malaysia Melaka Karung Berkunci 1200, Hang Tuah Jaya, Ayer Keroh, 75450, Melaka, Malaysia