

# Smart Bus Pass System Using Automatic Identification

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## Abstract

Now a days, due to the easy availability of almost all information on the internet these days, students are less motivated to attend the lecture. This project is to simplify attendance recorder system by using Radio Frequency Identification (RFID) technology in the College bus. The systems also have integrated with the RFID Database handling system for a fully functional system. The information from RFID Database handling system will be used for classroom attendance. Basically attendance is manually done and record is maintained in files. Our main idea of approach is to reduce manual work and to automate the attendance system. The attendance system is basically an embedded one. Embedded stands for hardware controlled by software. Here, the software using a Micro-controller controls all the hardware components. The micro-controller plays an important role in the system. The main objective of the system is to uniquely identify and to make attendance for a person. This requires a unique product, which has the capability of distinguishing different person. This is possible by the new emerging technology RFID (Radio Frequency Identification). The main parts of an RFID tag(with unique ID number) and RFID reader(for reading the RFID tag). In this system, RFID tag and RFID reader used are operating at 125KHz. The EEPROM used for storing the details has the capability of storing the details at a time. The PC can be used for restoring all the details of attendance made. This report provides a clear picture of hardware and software used in the system. It also provides an overall view with detailed discussion of the operation of the system.

*Keyword--*

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## 1.INTRODUCTION

The attendance system is basically an embedded an embedded one. Embedded stands for 'hardware controlled by

software'. Here, the software using a Micro-controller controls all the hardware components. The micro-controller plays an important role in the system. The main objective of the

system is to uniquely identify and the make attendance for a person from college bus. This requires a unique product, which has the capability of distinguishing different person. This is possible by the new emerging technology RFID(Radio Frequency Identification). The main parts of an RFID system are RFID tag(with unique ID number) and RFID reader(for reading the RFID tag). In this system, RFID tag and RFID reader used are operating at 125KHz. The EEPROM used for storing The plan and usage of a far reaching understudy information organization and UI is to supplant the present paper records School Staff can legitimately get to all parts of an understudy's scholastic advancement through a safe, Online interface inserted in the school's site. The framework uses client verification, showing just data vital for a person's obligations. Moreover, each sub framework has validation permitting approved clients to make or update data in that subsystem. All information is completely checked on and approved on the server before real record notification happens. Not with standing a staff UI, the framework plan for understudy UI, permitting clients to get to data and submit demands online along these lines diminishing preparing time. All information is put away safely on SQL servers over saw by the chairman and guarantees most elevated conceivable degree of security. The framework includes an intricate logging framework to follow all clients entrance and guarantee adjustment to information get to rules and is required to expand the proficiency of the school's record the board consequently diminishing. The

## **2.LITERATURE SURVEY**

the details has the capability of storing 256 person details at a time. The PC can be used for restoring all the details of attendance made. In this particular project we show that how we provide a attendance system with time management system. RFID reader system is connected to the PC Via COM port.

### **Objective**

work hours expected to get to and convey understudy records to clients. Beforehand, the school depended intensely on paper records for this activity. While paper records are a customary method for overseeing understudy information there are a few disadvantages to this technique.To start with, to pass on data to the understudies if ought to be shown on the notification board and the understudy needs to visit the notification board to watch that data. This framework gives a straight forward interface to the upkeep of understudy data it tends to be utilized by instructive establishments or universities to keep up the records of understudies no problem at all. Accomplishing this goal is troublesome utilizing a manual framework as the data is dissipated, can be excess and gathering important data might be very tedious. Everyone of these issues are explained utilizing on the web student Data Administration. The paper centers around introducing data in a simple and clear way which gives offices like lessening paper work and robotizing the record age process in an instructive organization.

In (1)Krithi, Dr M Ramakrishna examined about get the web based student management system using cloud

technology. Student Management System is essential for an institution or to a college or to a university, which utilizes computer, also which reduces manpower. Student Management System manages several student details like USN, student attendance, internal assessment marks, parent name, phone number, email-id, date-of-birth, class, sex etc. The goal of evolving this application is to induce the report regarding attendance at the completion of the conclave or at the middle of the conclave. Also it is possible to get the average of internal assessments and it is easy to get the report at the end. Student's and faculty's details uploaded by the admin. He will give username and passwords to the respective. Faculty will update the student status by putting present or absent. Suppose if particular student is absent, the message will be sent to the respective parent and email will be sent to parent. Finally student can only view his details, he can take the report. Student Management System has four modules. Initially admin will login, login module. Later he is going to upload the details of student, called student data module which has the functionality like searching, inserting, updating and deleting the student data. At the end of the session report will be generated, called report module which is

generated in the pdf format. If particular student is absent his status will be sent to the parent by a SMS, called SMS module, and email will be sent to the respective parent and it is known as email module. In(2)FU Yue, Khan dev examined about get the a study of student information management software. As a man-machine system that utilizes computer software & hardware resources and database, MIS (Management Information System) can provide information to support the operation, management and decision-making functions of enterprises or organizations. With the continuous scale expansion of colleges and universities, the number of students has increased. Dramatically and various students-related information contents are also doubled. In the face of huge amount of information, it is required to possess the student information management system to improve the efficiency of student management. Through this system, the standardized management, scientific statistics and fast query of student information can be realized, and thus the workload of management can be reduced. In this paper, a typical student information management system will be established to realize the systematization, standardization and automation of student information

relationship. In [3] Amita Dhale, Madhav Mistry, Tushar Zore examined about getting a survey on "SMART CONNECT" an android and web based application for college management system. In recent years the Android Technology with web services has brought many drastic changes in the mobile application development field. This application provides a generalized solution to monitor the various works that are carried out by a College for managing it. "Smart Connect" provides a simple interface for maintenance of student information. It can be used by educational institutes or colleges to maintain the records of students. The creation and management of accurate, up-to-date information regarding a students' academic career is critically important in the university as well as colleges. Smart Connect deals with all kind of student details, academic related reports, college details, course details, curriculum, batch details, placement details and other resource related details too. It will also have faculty details, batch execution details, students' details in all aspects, the various academic notifications to the staff and students updated by the college administration. It also facilitates us explore all the activities happening in the college. Different reports and queries can be generated

based on vast options related to students, batch, course, faculty, exams, semesters, and certification and even for the entire college. In [4] Zhibing Liu, Huixiawang, Huizan examined about getting the design and implementation of student information management system. Student Information Management System realization including establishment and maintenance of the database and front-end application development. This paper describes the system functional and architecture design, and emphasizes the system's functionality, database design and functional modules, etc. Fully functional, flexible and convenient application and friendly interface provide a good guarantee for student information management.

### **3. EXISTING SYSTEM**

Staffs are physically enters the imprints in the Microsoft exceed expectations and figure the consequence of the understudy of internal test results. Because of manual count it requires some off-base computations. Understudy participation of current working semester can't be seen at some point because of manual record upkeep. Plausibility of mistake is higher and less exactness. Information can be situated in one spot so staffs can't get to an

understudy records at certain season of data required.

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There are some limitations the existing system such as,

- More Human Power.
- More Strength and Strain of manual labor needed.
- Repetition of same procedure.
- Lower Security.
- Data Redundancy.
- Difficulty to handle.
- Difficulty to update data.
- Backup data can be Moderate to Maintain.

#### 4.PROPOSED SYSTEM

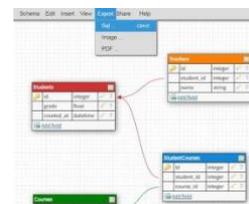
Proposed System consists of computerizing the current manual arrangement of creating Internal and Attendance Reports of Students. It gives exact data consistently and Accurate Calculations can be performed. All years together accumulated data can be spared

#### Limitations

and can be gotten to whenever. The information which is put away in the store helps in taking keen choices by the administration.

### 5. ARCHITECTURE

RFID card



Database



RFID Reader



Attendance

software application

### 6.MODULES

#### 1)APP Registration:

For the enlistment of client with Name, College Name, Department, Year, Source Place and destination Place and RFID digital signature details of client will be registered. At that point the gathering director includes into the gathering client list which will be utilized in the recognizability stage.

#### 2)Digital Transmitter:

By utilizing Bluetooth, the customer subtleties will be sent to Arduino UNO. The Arduino is used to manipulate the serial operation based the program present in the output is taken from one of the four ports.

### 3)RFID Reader:

The Reader module comes with an on-chip antenna and can be powered up with a 5V power supply. Power-up the module and connect the transmit pin of the module to receive pin of your micro-controller. Show your card within the reading distance and the card number is thrown at the output. Optionally the module can be configured for also a weight and output.

### Arduino Program Screenshot



### Materials and methodology

**Radio-frequency identification (RFID)** RFID has grown rapidly in recent decades along with the demand from modern industry where data accuracy is required and efficiency improvements of a system, the supporting components of this electronic equipment are RFID reader and RFID

Tags, where many kinds of tags have been manufactured according to industry needs. This technology has been applied to various sectors such as industry , airports , attendance monitoring systems , and with the use of IOT will be able to make this system more optimal

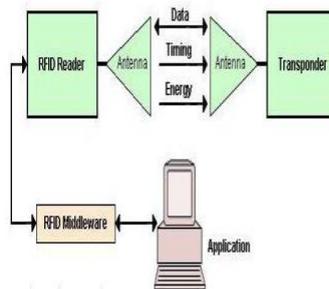


Fig Components of RFID

### Program – Arduino to LCD

```

#include<LiquidCrystal.h>
LiquidCrystal lcd(12, 11, 5, 4, 3, 2); //
sets the interfacing pins

void setup()
{
  lcd.begin(16, 2); // initializes the 16x2
LCD
}

void loop()
{
  lcd.setCursor(0,0); //sets the
cursor at row 0 column 0
  }
  
```

```

lcd.print("16x2 LCD MODULE"); //
prints 16x2 LCD MODULE
lcd.setCursor(2,1);           //sets the
cursor at row 1 column 2
lcd.print("HELLO WORLD");     //
prints HELLO WORLD
}

```

## 7.CONCLUSION:

As the RFID technology evolves, more sophisticated applications will use the capability of RFID to receive, store and forward data to a remote sink source. RFID has many applications as can be imagined. In this project, we have utilized the versatility of RFID in implementing functional and automatic student attendance recording system that allows students to simply fill their attendance in college bus just by ID cards.

### Future Enhancement

Hence, the limitation of this design would be improved upon in future by considering the following salient recommendations: By incorporating a facial recognition application that would serve to further increase the biometric security of the system against impersonation by erring students. Usage of High Frequency (HF) active RFID tags against passive Low frequency (LF) RFID tags for better performance and

flexibility of users Performance evaluation of combination of thumbprint, facial recognition and RFID technology to students' attendance monitoring problem.

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