RFID Based Attendance Report of Students using GUI app

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Abstract: In this paper, we propose an attendance system for e students using the integration of RFID and GSM technologies designed to control the entering/exiting of students from the classroom. This system does several tasks, including identifying student ID card before entering the classroom using RFID tag, which will exchange the data with the RFID reader placed at classroom through radio waves and shows name of each student on the LCD display. This is useful to know how many students are inside the class. It then sends an SMS to the management and also to parents through a GSM modem, that students have attended the classes. The system checks and detects which student has not attended the classes or leaves the classroom and issues an alert message to their parents. In addition, the system checks the files in the college and updates the database. The staff can log into system website and monitor the details of students.

Index Terms:RFID, GSM modem, LCD Display.

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I. INTRODUCTION

Around the world there are many colleges and schools and marking the attendance of students is a regular practice. This paper proposes a system that marks the attendance automatically by scanning the ID cards there by reducing the risk of marking the attendance manually. While there many issues that might disturb the parents regarding their children whether the students reach the college or not. The paper intends to look into introducing access of ID card to know the presence of student in the classroom to know the student reach the college safely. The supervision of the regularity of students during their entry and exit from the classroom is difficult to identify so we introduce the attendance report using RFID technology, which led to know the presence of student in classroom to the teacher. The present system follows the procedure of calling the roll number and asking the students to sig the attendance report. The procedure followed in many colleges and schools is to pass the attendance sheet and the students sign the sheet when the lecture is conducted. If the number of students in the class is large it may be difficult to pass the attendance sheet around the classroom and sign it manually within a given time. It many also lead the students to loss the concentration on the lecture and also lecturer many also find it difficult to get attention from students. Also there is a problem that some students may sign in a wrong place or mark the attendance of students who have not attended the class which leads to wrong attendance data. Some other problems may also arise that is the lecture may miss the sheet. It may be difficult for the lecturer to find the percentage of attendance. In present day situations providing security of students is a major task. The college student has to reach the college safely. Now days the parents are worried about their children after the child getting out of the home. The college management also needs to know that the students has arrived the college safely or not. In this paper, we proposed the attendance report by using RFID technique. Here, the student before entering the class the student has to scan the identity card and the system automatically note the attendance that the student arrived the college and the alert message will be sent to parents that their child reach the college safely. If the management needs any details of the student no need to call the student they access the details from the UGI system from the scanned data of that day.

The proposed system Attendance management for students using RFID has used the coherent mechanism how the RFID tag is read by a reader in the student maintains the attendance at classroom level. Important advantage of this system is a single hardware implementation results in designing two different modules.

II. IMPLEMENTATION

The Door Unit Description

The attendance unit will be fixed at the entrance of the door and it will detect the students when they enter /leave the class .For this objective we utilize RFID technology. This application uses a reader and few tags. Based on the frequency ranges such as low frequency, high frequency and ultra-high frequency they are classified into three types. In this application we are using UHF RFID reader, because of its high transmission power when compared with other two types and its feature of adjusting the distance.

The RFID reader will be located inside the attendance unit at the entrance. It will be positioned where it will only detect the students when they are inside the class. But if the student is outside near the class, the reader will not detect him. Every student will be provided with a RFID Tag attached ID Card. The attendance unit is responsible for sending relevant tag information to the school unit where it will be stored and processed. Based on the received information, other related students' information can be retrieved from the database for further processing (e.g. texting the parent).

There are two types of RFID tags, passive and active tags. In the particular technology passive RFID tags are used for having the features of short reading range which is suitable for the particular application that is the student when he is close to the reader (i.e. when s/he enters or leaves the class). They are cheaper than active RFID tags and easy to maintain.
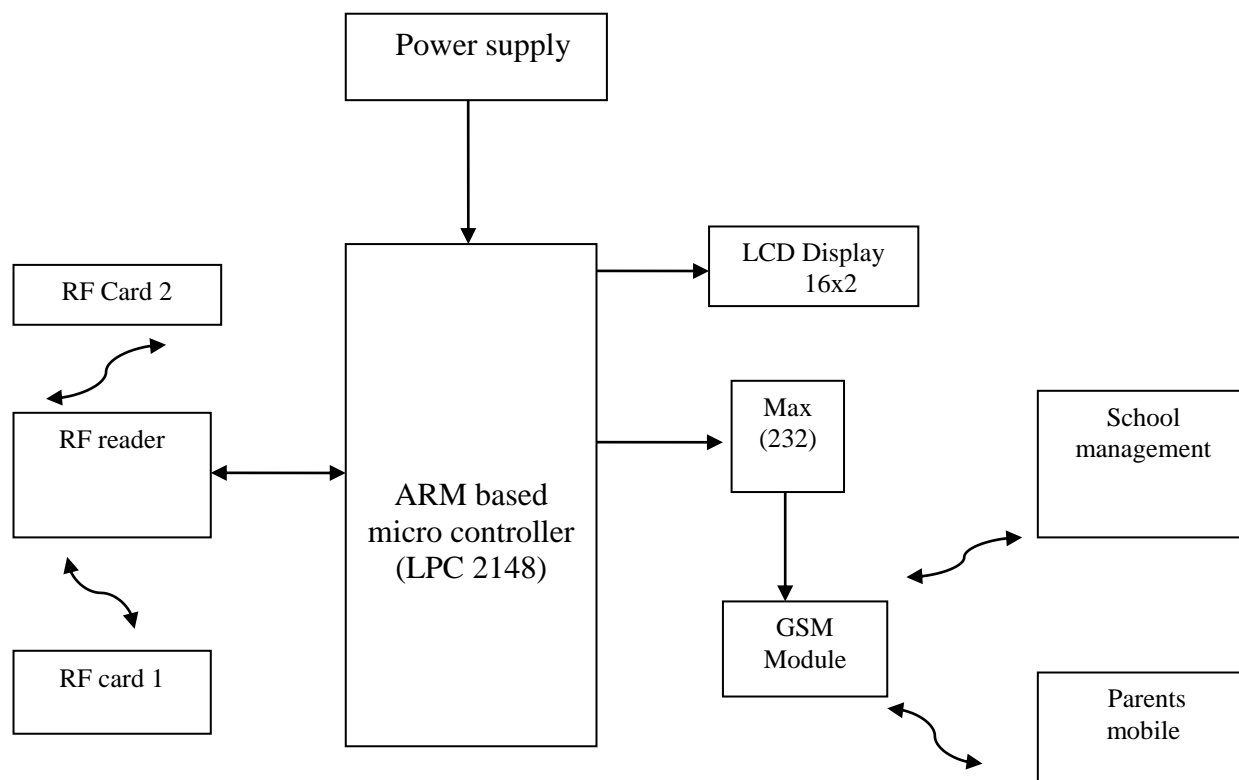
Fig 2.1 Door Unit

The Management Unit Description

The management unit consists of a server interfaced with GSM modem to receive data inside the classroom. The serve The server concurrently works as database server and web server to host the web-application that are designed to corrupt the setting so of the system, update the system and find any data from the database of the system. Along with that the serve maintains communication with SMS gate way to send message to parents if the student does not attend the classes.

A sample of this system is used and being checked. Testing is very vital part to verify the functionality of the system that is proposed. It should be designed in such a way that the chances of finding the fault and checking the system that is proposed are very less. Each unit must be designed and checked individually that they are functioning properly. Then they must be integrated on to the single system. The unit test was held for all the units in our system: RFID reader and tags, GSM modems and school server. After all the components are tested and their functionality is verified they are integrated as a single management unit
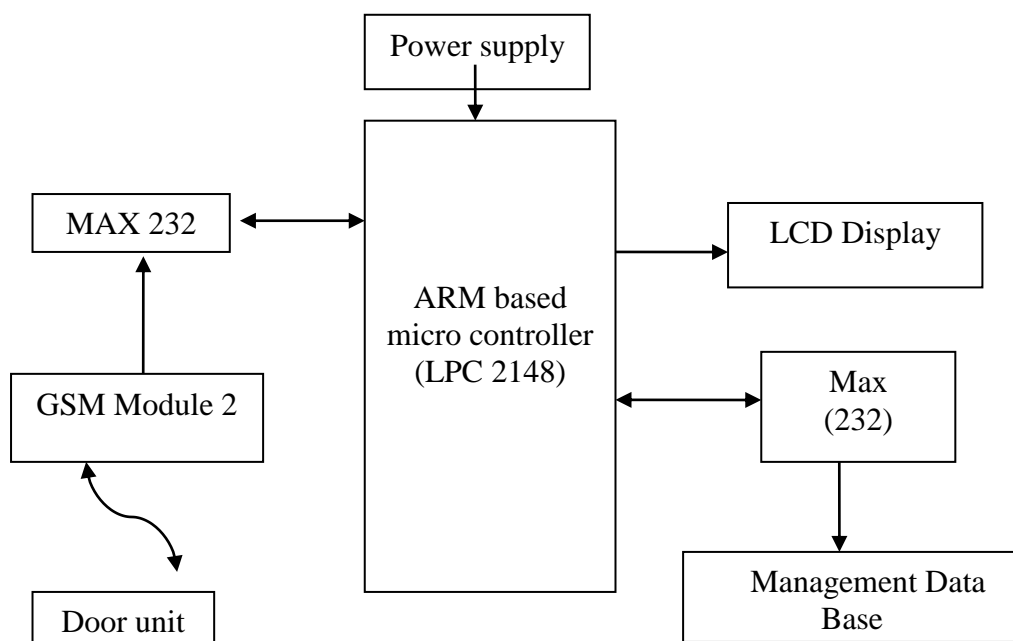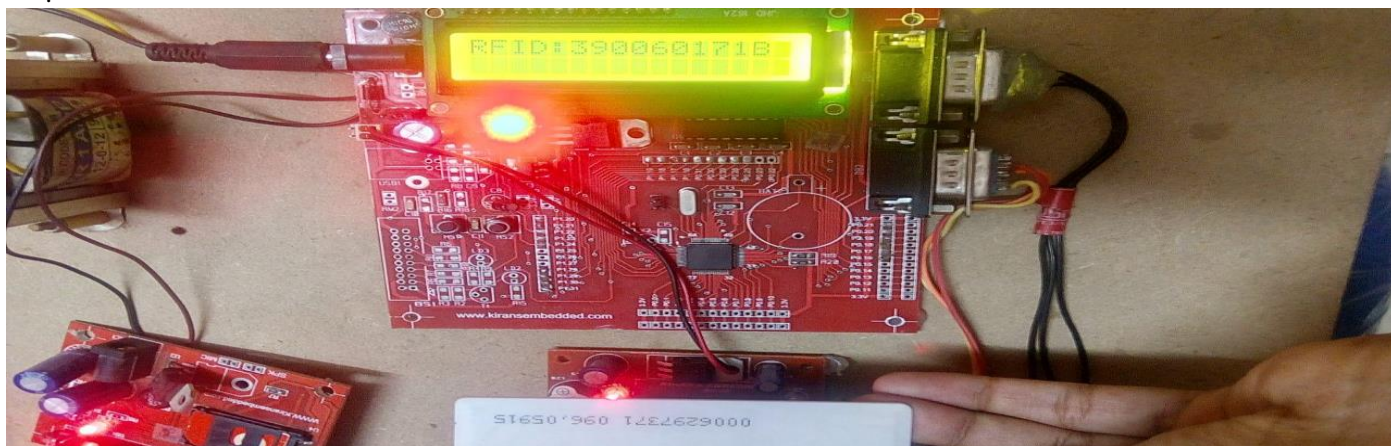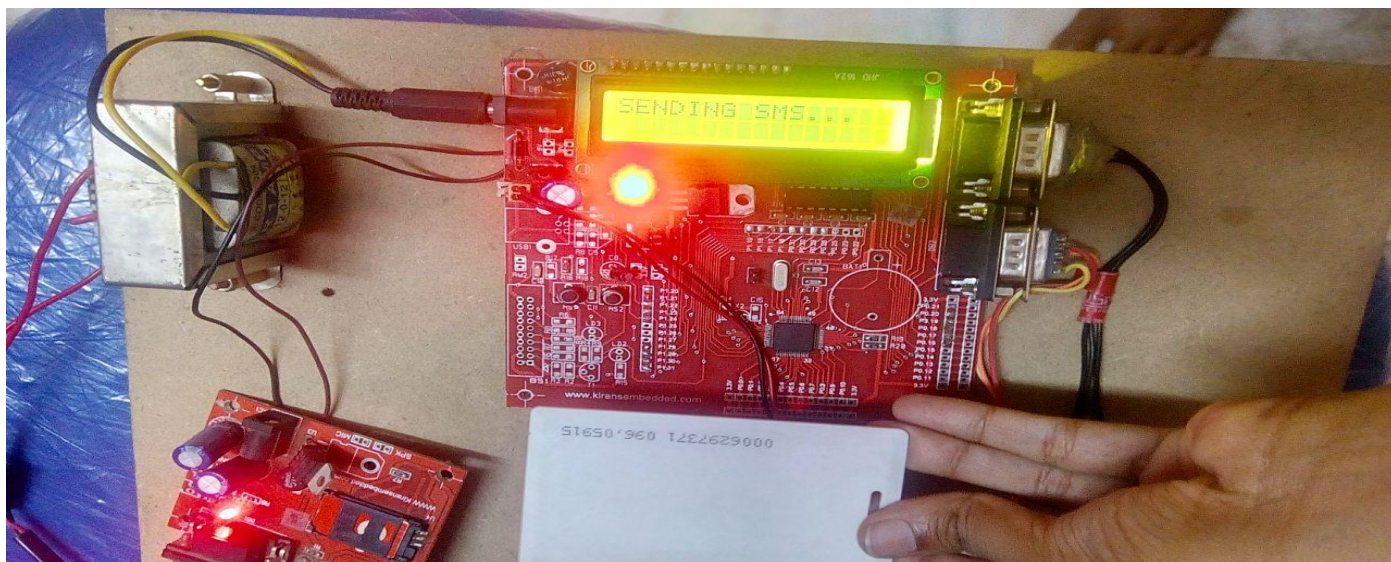

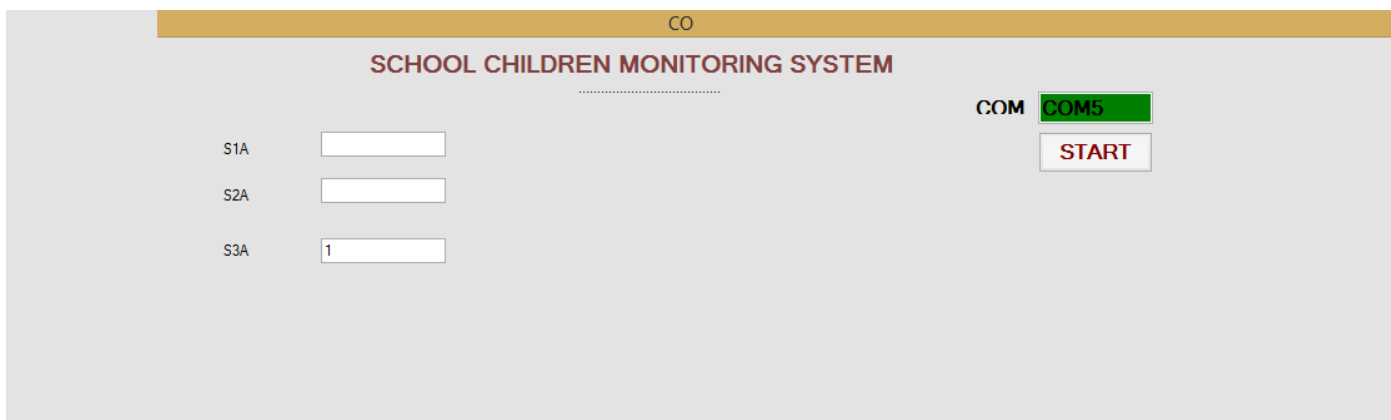**Fig2.3 Management Unit**

III. RESULTS AND DISCUSSION

- As the Student enters the class the card is identified and the number is displayed om the LCD

- When the ID card is scaned the automaticallt SMS is send to the parents that the student is present in the class

Fig 3.1 Kit Results of Door unit

- When the first student enters the class then the card is scanned and attendance is marked

- When the next student enters the class then the card is scanned and attendance is marked

- When the next student enters the class then the card is scanned and attendance is marked

Fig 3.2: Management Unit Results

IV.CONCLUSION

The integration of RFID and GSM technologies for automatic attendance purpose is very important now a days the students go out from home they reach the college but they don't attend the classes. In this paper, attendance system for college students has been developed. Using this system, concerned authorities, has to know whether the students are coming regularly or not to the college that can be visible from the RFID card. At the same time, in case if there was a student not came to college, the system will send an SMS message to the management of the school to take the right decision. The paper shows that that RFID technology based tracker system is still acts as one of the best solution to enhance the safety of the students, which will help the college management and parents about the student safety.

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