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RFID Based Student Monitoring And No Due Status Checking

M. Sivalingamaiah

E. Satheesh Kumar

M. Vijaya Lakshmi

Dept. Of ECE,
SISTK, Puttur, A.P.

Abstract: ***Every student after the completion of degree has to obtain the NO DUE certificate from the college which is long procedure. Sometimes it may take many days to get the statements. Something has to be done to reduce the time consumption. Hence we are implementing this project, so that students can easily collect their no due statement. If any student they have to know the No Due statement (ex: library, hostel fee, mess bill etc.) in the particular semester or end of the semester, through RFID TAG he can check and pay by the selection inputs, if switch one is press and show ID card to know the No Due statement and display in LCD .If second switch press to pay amount. Every completion of each process NO DUES STATUS sms send to the parent.***

Keywords: RFID, LPC2148, SPI, SSP

I. INTRODUCTION

Among the various technological devices and systems, global system for mobile communication (GSM) is believed as an efficient and fast enough technique that can perform efficient, real time object identification and fast reporting. Nowadays, due to the easy availability of almost all information on the internet these days, students are less motivated to attend the lecture. GSM based tracking system will pass complete information about, where the object (student) and its activities. The RFID system is utilized as a board module to attach the parts of the object (bag, identity card, tag, etc) and follow the object then and there.

II. EXISTING SYSTEM

Student Monitoring and No due status checking is very important in any organization or educational institutions because it is used for further reference and institutional purposes but in past years, most of the universities, faculty take attendance by calling out the names and surnames of students, and then marking them, while, in others, faculty pass around a sheet of paper, asking students to sign in attendance sheet just next to their surnames and in some colleges bio metric system is used and in some uses bar code system.

After completion of degree every student has to obtain the DUE certificate from the college which is long procedure. sometimes it may take many days to get the statements. Managing and maintaining records for a period of time is also burdensome task.

III. PROPOSED SYSTEM

Something has to be done to reduce the time consumption. Hence we are implementing this project, so that students can easily collect their due statement. If any student they have to know the Due statement (ex: library, hostel fee, mess bill etc.) in the particular semester, through RFID TAG he can check and pay by the selection inputs, if switch one is press and show ID card to know the Due statement and display in LCD. Every completion of each process DUE STATUS sms send to the parent. GSM and RFID based college maintenance system is used where RFID tag provided, when is read by reader, it compares the codes with predefined codes in

the machine, based on correctness it sends an acknowledgement to the parents of that student and it also maintains a record of check in and check out timings of student, which can be further transferred to the administrator via network systems. RFID readers were placed at different places in college like library, classroom, cantten. When student enters RFID readers scans the RFID tag and GSM modem is assisted to the RFID readers which sends an SMS to the respective coordinator. whenever he/she needs information of students at different places he/she sends an SMS to the GSM modem which is connected to the RFID reader. Then the gsm modem will sends an acknowledgement of students present at that particular places.

A. BLOCK DIAGRAM

Proposed block diagram of RFID based student monitoring and due status checking is as shown in the below figure fig.3.1. It has shown the main blocks that are being used in the system.

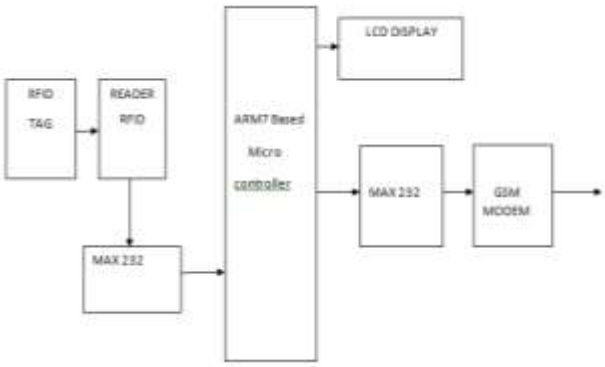

Figure 3.1: Block Diagram

B. ARM BASED LPC2148

The LPC2148 microcontrollers are based on a 32/16 bit ARM7TDMI-S CPU with real-time emulation and embedded trace support, that combines the microcontroller with embedded high speed flash memory ranging from 32 KB to 512 KB. A 128-bit wide memory interface and unique accelerator architecture enable 32-bit code execution at the maximum clock rate. For critical code size applications, the alternative 16-bit Thumb mode reduces code by more than 30% with minimal performance penalty.

Due to their tiny size and low power consumption, LPC2141/2/4/6/8 are ideal for applications where miniaturization is a key requirement, such as access control and point-of-sale. A blend of serial communications interfaces ranging from a USB 2.0 Full Speed device, multiple UARTS, SPI, SSP to I2Cs and on-chip SRAM of 8 KB up to 40 KB, make these devices very well suited for communication gateways and protocol converters, soft modems, voice recognition and low end imaging, providing both large buffer size and high processing power. Various 32-bit timers, single or dual 10-bit ADC(s), 10-bit DAC, PWM channels and 45 fast GPIO lines with up to nine edge or level sensitive external interrupt pins make these microcontrollers particularly suitable for industrial control and medical systems.

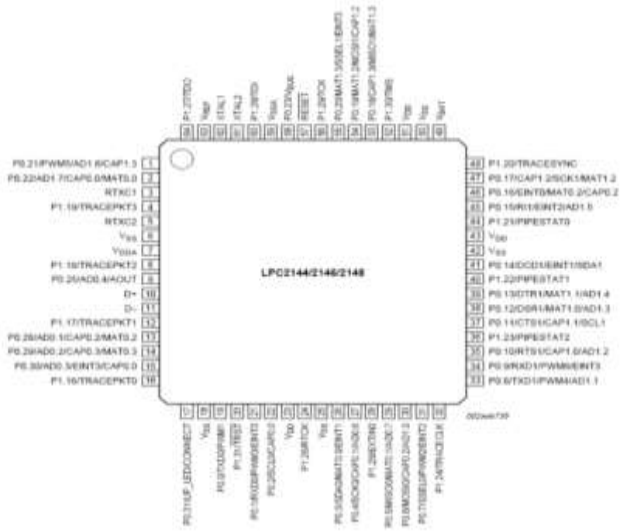

Figure 3.2: Pin diagram of LPC2148

C. RFID (RADIO FREQUENCY IDENTIFIER)

Radio-frequency identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders. An RFID tag is an object that can be applied to or incorporated into a product, animal, or person for the purpose of identification using radio waves. Some tags can be read from several meters away and beyond the line of sight of the reader. Most RFID tags contain at least two parts. One is an integrated circuit for storing and processing information, modulating and demodulating a (RF) signal, and other specialized functions. The second is an antenna for receiving and transmitting the signal. Chip less RFID allows for discrete identification of tags without an integrated circuit, thereby allowing tags to be printed directly onto assets at a lower cost than traditional tags.

IV. EXPERIMENTAL RESULTS

A. PLANT SETUP

The overall plant setup of RFID based student monitoring and due status checking is as shown in the fig.4.1

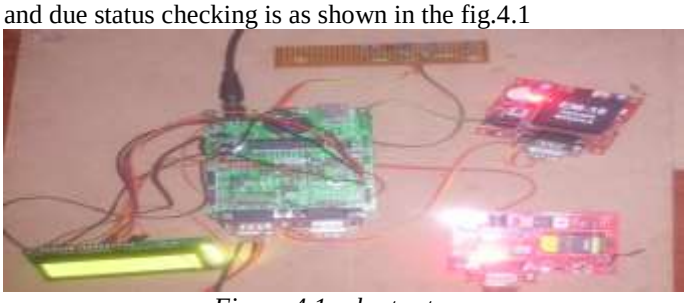

Figure 4.1: plant set up

B. STEP WISE KIT EXPLANATION

Shown in below fig.4.2(a) ,a default text welcoming RFID APPLICATION will be displayed on LCD as soon as the power is switched ON.

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After the kit is switched ON ,an initialization text will be shown on LCD, then the LCD will displays PLEASE SHOW THE RFID CARD as shown in the below fig.4.2(b).

Figure 4.2(a): Intialized text

Figure 4.2(b): RFID reader waiting for the input

When the RFID card is shown to the RFID reader, it reads and LCD will displays the student name as shown in the below fig.4.2(c).

An SMS will be automatically sent to the respective coordinator and LCD will displays SENDIND SMS as shown in the below fig.4.2(d)

Figure 4.2(c): LCD displaying the student name

Figure 4.2(d): Displaying the status of the SMS

If the SMS is sent successfully the LCD will displays SMS SEND as shown in below fig.4.2(e).

Figure 4.2(e): LCD displaying SMS SEND

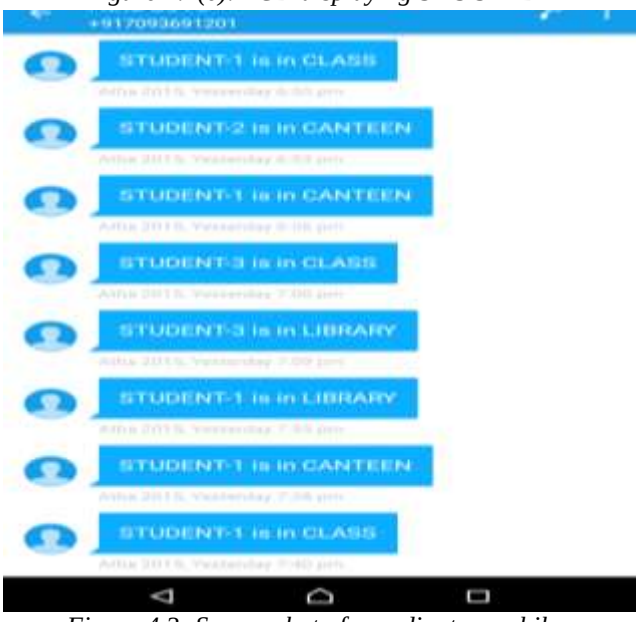

Figure 4.3: Screen shot of coordinator mobile

C. RESULT

We can see the SMS send by the GSM modem to the coordinator mobile as shown in the below fig.4.3. Thus the coordinator will gets SMS notifications at the time of students entering into respective places in a college where the RFID readers will scans the RFID tags held with the students.

The coordinator can also send an SMS to the GSM modem like CL/CA/LI, which will gives a reply of number of students present at the particular location class, canteen, library respectively.

V. ADVANTAGES

- ✓ Easy to use.
- ✓ Cost is less when compared to other systems.
- ✓ Compatible.
- ✓ Reduce the maintenance task of attendance registers.
- ✓ Time saving.

VI. APPLICATIONS

- ✓ Used in Educational institutions.
- ✓ Used in office management.
- ✓ Used in organizations and student management.

VII. CONCLUSION

The main purpose of this project is to monitor the student and the information of the student for every hour is send like an SMS to the coordinator where ever the student present in the college. The other application of the project is due status checking, that an SMS will be send to parent/student whenever student wants to know the fees due for the semester by showing their RFID cards to the reader.

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