

Student Smart Card using VB.NET, SQL, Barcode

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ABSTRACT

Smart cards is used worldwide nowadays; it is popular due to its portability and ease of use. Currently smart cards are used in various sectors but not used mainly in college sectors. This paper aims developing of an advanced system for students which can be used in attendance management, canteen payments, library management and office work using smart cards which can be used in educational institutes. Here we can try to achieve maximum usability of smart cards.

Keywords:- Attendance tracking, Library management system, Canteen payment

I. INTRODUCTION

Student smart card application helps students as well as staff to manage official documents management, canteen bill payments, library management in college, schools and educational institutes. It is based on INTRANET. It helps staff personnel's to manage student's attendance. It is also helps students to pay their canteen bills just by using their smart card number which can be recharged through admin and can also be used in Library for book management and fine payment by students on late return of book. This will help to overcome the tedious manual work by replacing it with digital technology of smart cards.

Attendance is very useful in colleges and schools to keep a track of punctuality of students as well as preparation of list of blacklist according to the guidelines of University. Currently the attendance of students, entering the data into system other calculations is done manually by the staff. All this work can be done automatically using smart cards with the help of various technologies like RFID, barcode technology, QR code.

Smart cards here can be used in canteens too, students can get their smart cards recharged from the canteen and office previously and then later canteen bills can be paid directly using smart card number without having the need to carry cash. Also payments can be made in office related works too using smart cards such as exam fees, form fees, any kind of fine etc.

II. LITERATURE SURVEY

A. Multi-purpose Student Card System Using Smart Card Technology:

Magnetic strip cards are used to do multipurpose work like attendance, paying digitally storing record in database ,storing scanned documents at a centralized location for ease of access of data and reduces tedious manual work. The motivation is been taken from looking at wallet where

there are different cards like driving license , PAN card, ID card ,library and many more to avoid this situation the multi-purpose smart card is introduced which will contain all the details of the user in single card.

Benefits of this system are:

- Faster and more accurate.
- Digital Transaction of bills and fine.
- Portability and ease of access to documents.

Disadvantage of this system:

- While accessing the system if the server goes down data fetching would be difficult.
- Initial investment required in hardware.

B. Multipurpose smart card system:

Chip card which is of standard size made plastic is used to store data. This plastic chip card contain details of the card owner which is in encrypted form preventing misuse or unauthorized access of data .This type of card is basically used in ATM cards. It is very suitable in a country like India where population is highly dense hence carrying such multipurpose card is way better option then carrying adhaar card, pan card, etc.

Benefits of this system:

- It provides security as it cannot be tampered so the only way to access the information is by using PIN code.
- This system is accurate, fast and more efficient.
- Smart card is been encrypted and given unique id, hence, the information is protected.

Limitations of this system:

- Initial investment needs to be done in hardware.

- Training needs to be given to admin’s and student’s in initial phase.

C Barcode Based Student Attendance System:

This system consist of a card with barcode printed on it, this card can be directly scanned by the students. Usually attendance is taken manually by teachers in colleges. There is need of automated attendance system which records attendance and stores it in database and calculates and displays attendance to the students without any human intervention. This system can be implemented using different types barcode are as follows

1. Linear Barcodes
2. Matrix Barcodes

Benefits of this system are:

- It is very simple technology compared to RFID.
- It is cost effective.

III. PROPOSED SYSTEM

In current scenario the student details is done manually the work is done on paper which causes error it takes more time to put details manually. So, the proposed system uses Barcode reader to take student details. In this system, each student is issued with barcode tag. Barcode tags and a computer with the software which stores the database about the entire details of the student’s.

IV. ARCHITECTURE

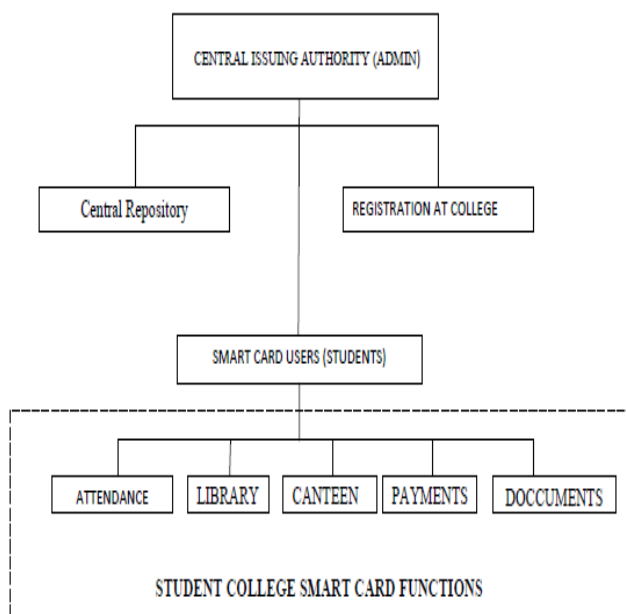


Fig.1: Basic architecture of the system.

The proposed system integrates all various modules as shown in fig.1. It contains of different modules which are connected and handled centrally by proposed system.

The above figure shows the basic working of the proposed intranet system for student’s attendance management system: The below figure shows the basic working of the proposed intranet system for student’s attendance management system.

V. WORKING

Proposed system is divided in some main modules they are as follows:

Attendance: This module records attendance of student with the help of barcode printed on smart card of student and stores it into the database. The data recorded by the module is entered directly into the database hence overcoming the manual efforts that take places in current scenario. The data can be further used to to manipulate or carry out operations on it.

Canteen: This module will be operated by the staff members, the module handler will take care of recharging the students monetary balance in the card and also the bill payment in the canteen will be carried out using this card.

Library: In library the book keeper can assign book to a particular student on the unique ID that would be generated by the smart card, it will also keep track of late returning of book and will automatically levy fine upon the particular student.

VI. CONCLUSION

The concept of Student smart card is framed, which will have different features like office work, attendance management and library management. It will also work as college ID for students. In this paper we are merging different applications together in one smart card. Thus, the person needs not to carry different cards for various purposes. The person can carry one single card and can use the same card for various purposes. Thus, a person needs not to carry multiple cards, he can just carry a single card for different purposes.

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