



# International Journal of Innovative Research in Computer and Communication Engineering

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## Barcode Based Student Record System

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**ABSTRACT:** Student record plays important role in academic world. It is therefore essential to handle students' records in a way that is accessible, maintainable and secure. There are various types of students' records that college needs to maintain such as students' personal information, academic score, attendance records, library details, etc. The manual method of maintaining and storing student record is vulnerable due to human errors and is also insecure. This system (B.B.S.R.S) is being developed for an engineering college to maintain and facilitate easy access to student records. For this the users must be registered with the system after which they can view as well as modify records as per the permissions given to them. Each student's ID card will have a unique barcode at the back side of it. The users need to scan these barcode using barcode scanner to access or modify particular student details which is stored in central database Also teachers can record attendance of students and can access it anytime. Also librarian can maintain book issue and return details of students by scanning barcodes of students as well as books.

**KEYWORDS :** Barcode; Barcode Scanner; Login ,Information Management System.

### I. INTRODUCTION

Barcode based student record system (B.B.S.R.S) is used for keep record of every student in a single system. In the project we are using barcodes. This barcodes is nothing but a machine-readable code in the form of patterns. At the time of admission each student is assigned a unique barcode. This unique barcode is generated by student personal information and enrollment number and by using barcode scanner these barcodes is used to retrieve the student information from the database. This system aims in reducing the manual effort and improving the efficiency of the data retrieval. Here the object is the student whose data needs to be retrieved. The system keeps track of every single student record like attendance, midterm marks, semester marks, extracurricular activities, drop or KT, personal information etc. from first years to last years. The system also helps to generate the defaulter list based on the student attendance records. The reports are also generated as per required. The records are secured and easily accessible. Teachers can access as well as modify records, but students can only access their records. Librarian can maintain book issue and return details of each student by just scanning barcodes of students as well as books and can also calculate fine of late returning of books.

### II. RELATED WORK

A Software which utilizes barcode scanner to record and maintain the attendance of the students is described in paper [1]. A Barcode is a machine readable representation of information in a visual format. A barcode consists of a series of parallel, adjacent bars and spaces which is read by a barcode scanner. Each student will be assigned a unique barcode ID which identifies the student and displays records of the students. Teacher and administrator will only have access to the system with their respective login ID's and passwords. The paper [2] describes about the Intranet Based Content Management System. It is an application that is developed for the students or the department to access for monitoring the attendance of the student. This system can be accessed by students as well as the teachers to obtain the record for which each individual is assigned a login ID and a password. For this the student, must be registered with the system admin for access. Paper [3] presents a Student Information Management System realization including establishment and maintenance of

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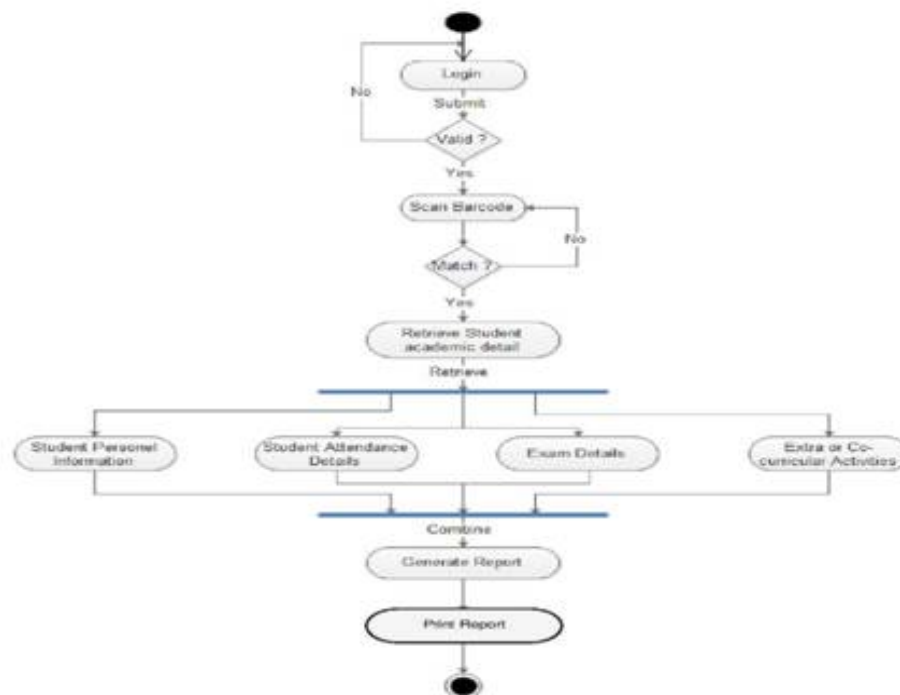
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the database and front-end application development & describes the system functional and architecture design, and emphasizes the system's functionality, database design and functional modules, etc. Fully functional, flexible and convenient application and friendly interface provide a for student information management.

Paper [4] which includes including all the data of the students for the whole academic year attendance, progress in the course, completed semesters, years, coming semester year curriculum details, exam details, project or any other assignment details, final exam result and all these will be available through a secure, online interface embedded in the college's website, 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.

The paper [5] include the implementation of a library management system using RFID . RFID is used because it may allow a proper transaction flow for the issue and return of the books maintaining a proper record of the issuer. This system would be able to issue and return books via RFID tags and also calculates the corresponding fine associated with the time period of the absence of the book from the library database.

Firstly, the staff users need to login to system by using appropriate login ID and password. After that user scans barcode of particular student using barcode scanner to retrieve his/her details like personal information, exam details, attendance, curricular activities details etc. Each student details are stored in database which can be retrieve/modify/delete by the user. Finally, user generates reports according to requirement and gets the print. The implementation also deals with the security aspects of the system as it provides the user and staff authentication. If the student is blocked s t



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## III. RESULTS

Our system is Windows Application created using Visual Studio and Microsoft SQL Server. On load of the system there is a Login Page which provides us option to login as student, admin or staff members.



Fig. 1

After the login there is the main page which consists of multiple options regarding the page that we want to browse through including students details which includes admission of student, retrieving all student details, ID Card Generation. etc.

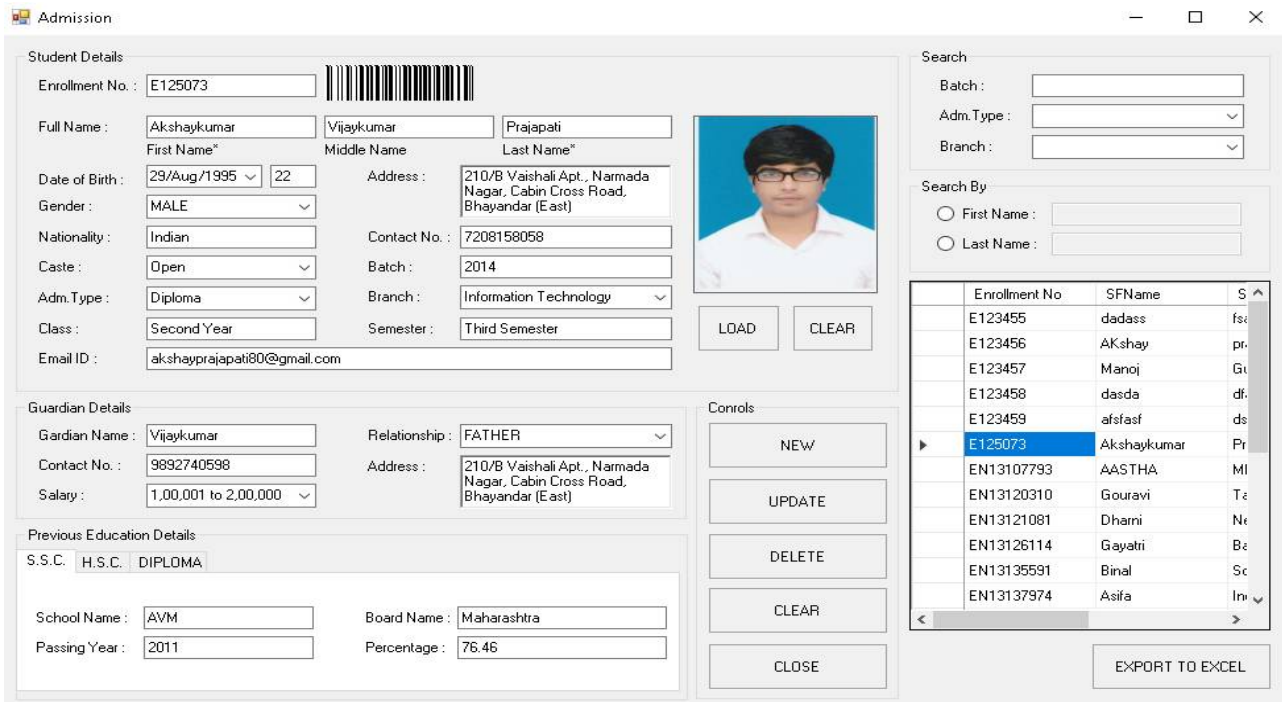


Fig.2

Fig 2. Shows the admission form consists of all the sections needed to be filled by staff regarding student. A search option is also provided to search the students record. Also the option for exporting data to excel is provided.



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Depending upon the Enrollment Number ID Card of the student can also be generated.

Student Details

EnrollmentNo: E125073

First Name: Akshaykumar Middle Name: Vijaykumar Last Name: Prajapati

Address: 210/B Vaishali Apt., Narmada Nagar, Cabin Cross Road, Bhayandar (East) Class: Second Year Date of Birth: 29/Aug/1995

Branch: Information Technology Contact No.: 7208158058

EmailID: akshayprajapati80@gmail.com

Generate

Fig 3

**ATHARAV EDUCATIONAL TRUST'S  
ATHARVA COLLEGE OF ENGINEERING  
(ISO: 9001-2000 Certified)**

Malad-Marve Road, Charkop Naka, Malad (W), Mumbai-400095,  
Maharashtra, India Tel: +91-22-4029 4949

**ACADEMIC YEAR - 20 - 20**

**Enrollment NO :** E125073  
**Name :** AkshaykurVijaykumarPrajapati  
**DOB :** 8/29/1995 12:00:00AM  
**Class :** Second Year  
**Branch :** Information Technology

**Principal's Sign.**

Fig. 4

**Note**

This card is not transferable and must be produced when demanded by the college staff. The holder of this card is solely responsible for the complications arising due to misuse and/or loss of this card, in such events the matter should reported to the Principal immediately in writing. IF FOUND, PLEASE MAIL IT TO THE COLLEGE.

**Address :** 210/B Vaishali Apt, Narmada Nagar, Cabin Cross Road, Bhayandar (East)

**ContactNo :** 7208158058

**EmailID :** akshayprajapati80@gmail.com **Student Sign.**

Fig.5



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**Academic Marks**

**Student Details**

EnrollmentNo: E123456 1

Full Name : AKshay vijay prajapati

First Name\* Middle Name Last Name\*

Class : Second Year Semester : Third Semester

Branch : Information Technology

Exam Type : Term Test-1

---

**Marks Details**

\*Maximum Marks 20

Applied Mathematic 20 OOPM 18 DBMS 16

Data Structures 20 Analog & Digital Cir 15 PADC 17

Status :

---

**Controls**

SAVE CLEAR CLOSE

Fig 6

Fig 6 and7 shows the options to insert and retrieve student marks details according to his/her current semester

**Display Marks**

**StudentDetails**

EnrollmentNo: E123456 Student Name: AKshay vijay prajapati

Class: Second Year Branch: Information Technology

**Search Marks Record By**

Exam Type: Term Test-1 Class: Semester:

Name	ExamType	Subjects	Out of	Marks
AKshay	Term Test-1	Applied Mathema...	20	20
	Term Test-1	Data Structures	20	12
	Term Test-1	OOPM	20	20
	Term Test-1	Analog & Digital ...	20	19
	Term Test-1	DBMS	20	17
*	Term Test-1	PADC	20	15

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**Controls**

RESET ALL CLOSE

Fig 7

Figures 8,9 shows the issue return section of library where the record of all the books issued by the student with the return time is recorded and charges are imposed onto that student if the return is after the return period.



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Book Issue

Issue Details

Issue ID : X-377262

Issue Date : 07/Apr /2017 Due Date : 14/Apr /2017

Student Details

Enrollment No : E125073 Student Name : Akshaykumar Vijaykumar Prajapati

Class : Second Year Branch : Information Technology

Book Details

Book ID : B-965968 Book Name : Data Structure

Author : Kevin Publisher : wiley

Edition : 2

Controls

SAVE CLEAR CLOSE

Book Return

Student Details

Enrollment No : E125073 Student Name : Akshaykumar Vijaykumar Prajapati

Class : Second Year Branch : Information Technology

Book Details

IssueID	BookID	BookTitle	Author	IssueDate
X-137651	B-965968	dsda	dsasd	4/7/2017 12:00:...
X-377262	B-965968	Data Structure	Kevin	4/7/2017 12:00:...

Return

Book Details

IssueID	BookID	BookTitle	DueDate	LateDays
X-377262	B-965968	Data Structure	4/14/2017 12:00:...	0

Remove

Controls

SAVE CLEAR

Process Complete

Book Returned Successfully

OK

### III. CONCLUSION AND FUTURE WORK

The Barcode Based Student Record System (B.B.S.R.S.) is implemented by scanning barcode of individuals where the unique barcode number is generated from the given student's enrollment number and where the admin will provide appropriate access to the individual's data for each login will ensure an efficient and an secured way of accessing, maintaining, and updating the data for the overall academic career of an individual student. By scanning the barcode of, particular student the user can get the personal information, attendance, academic marks details, library details, etc. The



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whole system can be taken on the cloud where all the data is stored at cloud level. The system can be implemented using 2D Barcode for enhanced security. Also, our system can be deployed as web application

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## BIOGRAPHY

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