

Barcode enabled Web based Student Attendance System

Sunil Kumar Dewangan¹, Shraddha Tiwari², Nikita Kesarwani³
Shri Shankaracharya Institute of Professional Management & Technology, Raipur^{1,2,3}

Abstract: Student attendance plays a significant role in the academic record of the students. Even in this era of technology in the widely the manual attendance system are in use, instead of the advanced attendance maintenance system. Here, we are proposing an automated attendance using barcode such that the institutes can overcome with the legacy system and move towards an advanced system that can reduce the efforts and time to maintain the attendance.

Key Words: Student Attendance, Barcode, PHP, Barcode Scanner.

I. Introduction

In the academics, attendance of students plays important role. Generally in manual attendance system, faculties used to call the name of students and marking their presence and some where faculties pass the paper sheet to sign their presence next to their name. These type of practices have their disadvantages. Both take more time and if anybody misses their attendance they had a great loss to show their presence in lecture. So to make it easier and to mitigate these issues a unique bar code based technique is proposed to take attendance of student that is based on unique identification number.

The uses of barcode based attendance system have many advantages. It will reduce the time taken by taking attendance by calling out or spreading the attendance sheet in the classroom. Also duplication of attendance possibility is removed by using this system. The main advantage of this system is that teacher can take attendance using his or her mobile phone which reduces the human effort and time consumption while taking attendance.

II. Problem Identification

The problem with the traditional attendance system is that, attendance usually taken on register and maintains the register till the end of session, it is a time consuming activity. Some faculty members require

attendance, some faculty count attendance positively in grade determination, while others count the lack of attendance against the student's grade. Even most faculty who don't require attendance by their students, encourage attendance in a variety of ways. Fundamentally, most faculty members probably believe that attendance is significant in student success but most of us can provide only anecdotal evidence to support our belief.

So here we propose that barcode based attendance system can be better than the traditional one, it will take very less time for taking student attendance and maintain the attendance record electronically on the database system.

III. Methodology

Attendance is the act or fact of attending universities, also, attendance is used to define the number of person present on a particular day on university. An attendance policy provides the guidelines and expectations for students [1].

The barcode scanner will scan the black and white lines and generate the digital signal which is propagated to decoder. The decoder, decodes the that black and white line and finds the unique code that is assigned into barcode and record it to data base of computer memory [2].

SAS can reduce the time spent by teacher in calculating the percentage of attendance for a student as well as for a class. In a click of button teacher can generate report at any point of time. Moreover, student's image which displayed after the scanning process expected to help teacher identify students before record their attendance [4].

In this paper, describes an ongoing project for recording examination attendance using RFID. The project is carried out to test in a university, where the system which is named PEAS is integrated [10].

Taking attendance in universities is generally by calling out name or roll number or by paper based method that sometimes cause errors. Thus the barcodes are used to take attendance of university students. Each student have unique bar code tag. This barcode tag is read by the barcode scanner of smart phones. This bar code is associated with mobile or computer with the software that record the details of students in their database [11].

Use Case Diagram

The case diagram of the Barcode Based Student Attendance System is shown in below, that shows hoe the information of the student stored in the memory and how teacher extract that information.

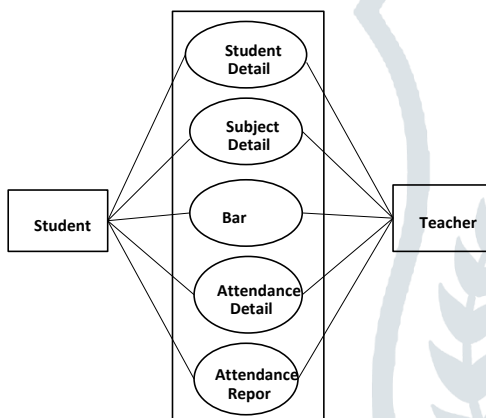


Fig. 1: Use case diagram

By the help of use case diagram here we know that both student and teacher will need the same detail like student details subject detail, Bar code, Attendance details, Attendance report. Student should fill the detail with the help of that detail. Institute will give a specific number or barcode number for each and every student with the help of unique bar code number teacher should take an attendance of the students with there mobile phone.

Proposed Work

The proposed idea give a barcode system using php to monitor student attendance record of student . It is a unique way to track student attendance using this method. Every student have assign a unique roll number on their ID cards in the form of barcode. A barcode scanner device have a special key, when this key alloweded by the teacher. It shows the subject list

and the teacher choose the subject whose attendance is take by him/her. After that the student start scanning the barcode for their attendance. Therefore the student attendance record is maintained properly using this proposed method accurately. The steps are as follows:

- In student attendance system HOD will login the page and should manage the faculties, students and the subject allotments and then he/she will logout and come to the home page.
- After that teacher will login the page and should start taking attendance with the help of barcode scanner or else directly login in the mobile.
- For giving attendance student will login the page into their mobile or else they give their id card to the teacher who will scan the barcode.
- If teacher want to view attendance than they can view and if they want to delete any student attendance which is unnecessary taken than they can delete also.
- All the record should automatically maintained into the database system.
- After that teacher should stop the attendance, logout and come to the home page.

IV. Result and Discussion

The main page contains login details of students such as Enter Email and Enter password that shown in below screenshot.

Fig. 2: Login form of Student

After entering the details of student in login page, a new module is generated that consists of several sub-modules such as Roll No., Name, Gender, Date of Birth, Contact, Email, Address and Upload Photo. This module also help to update the information of students that information will store in the database of computer memory by student entry form. The student entry form of the student is shown below screenshot.

sid	rollno	sname	branch	mobile	email	gender	semester	username	password
1	10001	Amit	CSE	9898989898	na@na.com	Male	4	10001	123
4	10002	Anuj Verma	CSE	5258525878	na@na.com	Male	5	10002	123
5	20001	Payal	IT	2525252525	payal	Female	6	20001	123
6	10004	Vishal Sahu	CSE	7412589531	na@na.com	Male	4	10004	123
7	666	annu	CSE	1234567890	sss@gmail.com	Female	8	666	123
8	777	raahul	CSE	2222233333	sss@gmail.com	Male	8	777	123
9	111	vidhi	CSE	22211113330	sss@gmail.com	Female	8	111	123
10	212	priya	CSE	1111111111	sss@gmail.com	Female	8	212	123

Fig. 3: Student attendance response in database [A]

Another module that is student search for which allow us to search the information of student by entering the field such as Roll No. of Student or Name of Student, we may get the information of student that is stored in the computer database. The Search form is shown below screenshot.

aid	sid	id	date_of_attendance	att_count
18	8	4	2019-04-07	5
19	2147483647	4	2019-04-07	5
20	2147483647	4	2019-04-07	5
22	2147483647	6	2019-04-08	4
23	2147483647	6	2019-04-08	4

Fig. 4: Attendance response database[B]

The case diagram of the Barcode Based Student Attendance System is shown in below, that shows hoe the information of the student stored in the memory and how teacher extract that information.

V. Conclusion

Thus proposed idea gives a barcode enabled attendance maintenance system to monitor student attendance record of student. It is a better way to track student attendance using this method. Every student has assigned a unique roll number on their ID cards in the form of barcode. A barcode scanner device have a special key, when this key allowed by teacher. It shows the subject list and the teacher choose the subject whose attendance is take by him/her. After that the student should start their mobile to scan the ID card barcode for their attendance that should be saved on the database in the format of P (present) and A (absent). Therefore the student attendance record is

maintained properly using this proposed method accurately.

References:

- [1] Hema Subramaniam, Marina Hassan & Setyawan Widyarto, "Bar Code Scanner Based Student Attendance System (SAS)," Journal TICOM, Vol.1, No.3 Mei, 2013.
- [2] H. Oktavianto, "Image-based Intelligent Attendance Logging System," pp. 1–6, 2012.
- [3] H. Oktavianto, "Image-based Intelligent Attendance Logging System," pp. 1–6, 2012.
- [4] M.Kassim, H.Mazlan, N.Zaini, and M.K.Salleh, "Webbased student attendance system using RFID technology," 2012 IEEE Control and System Graduate Research Colloquium, no. Icsgrc, pp. 213–218, Jul. 2012.
- [5] T.-C. Li, H.-W. Wu, and T.-S. Wu, "The Study of Biometrics Technology Applied in Attendance Management System," 2012 Third International Conference on Digital Manufacturing & Automation, pp. 943–947, Jul. 2012.
- [6] I.A.Ujan and I.A.Ismaili, "Biometric attendance system," The 2011 IEEE/ICME International Conference on Complex Medical Engineering, pp. 499–501, May 2011.
- [7] T.S.Lim, S.C.Sim, and M.M.Mansor, "RFID based attendance system," 2009 IEEE Symposium on Industrial Electronics and Applications, no. Isiea, pp. 778–782, Oct. 2009
- [8] T.S.Lim, S.C.Sim, and M.M.Mansor, "RFID based attendance system," 2009 IEEE Symposium on Industrial Electronics and Applications, no. Isiea, pp. 778–782, Oct. 2009.
- [9] M. I. Moxsin and N. M. Yasin, "The Implementation of Wireless Student Attendance System in an Examination Procedure," 2009 International Association of Computer Science and Information Technology - Spring Conference, pp. 174–177, 2009.
- [10] M.K.Y.Sabri, M.Z.A.A.Aziz, M.S.R.M.Shah, and M.F.A.Kadir, "Smart Attendance System by using RFID" figure 2, 2007.

- [11] A.Qaiser and S. A. Khan, “Automation of Time and Attendance using RFID Systems,” no. November, pp. 13–14, 2006.
- [12] A.Qaiser and S. A. Khan, “Automation of Time and Attendance using RFID Systems,” no. November, pp. 13–14, 2006.
- [13] Z.Yongqiang and L. Ji, “The Design of Wireless Fingerprint Attendance System,” 2006 International Conference on Communication Technology, pp. 1–4, Nov. 2006.
- [14] A.S.Bedi and J.H.Marshall, “Primary school attendance in Honduras,” Journal of Development Economics, vol. 69, pp. 129–153, 2002.

