SMART ATTENDENCE MONITERING SYSTEM

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Abstract

Attendance management has been a great challenge over the years . Ranging from university to polytechnics, colleges of educations and secondary schools, quality attendance management has been a freak. Manual authentication of attendance of logbooks has become an arduous task and this is also time-consuming. The academic attendance policy has generated a lot of questions at various quarters. All academic institutions have certain criteria for students regarding their attendance in class and examinations. The importance of student attendance in class cannot be over emphasized, as a result of this, administrators and lecturers of various academic institutions are concerned with the attendance irregularities. In the process of admitting students into an examination hall, 70% of attendance must be met and also considered for grade computation, therefore there is a huge need for monitoring and recording students' attendance. This brings about the need to have a tool to control students' attendance. The existing model of manual attendance monitoring (using paper sheets and an old file system) is not efficient and it is also time consuming. These aforementioned shortcomings among others serve as justification for migrating from manual based to the proposed system. The system is based on barcode reader technology and the details of this system are presented in this paper. The system can be easily accessed by the lecturers and most importantly, the reports can be generated in real-time processing, thus, providing valuable information about the students.

1. INTRODUCTION

Taking students' attendance by university instructors during each class is a time consuming process especially when classes are big. Some faculty policies require this task to be performed by the instructor in each lecture. In other words, out of the total hours that are assigned to a given course, which is typically forty-five hours per semester, up to eight hours may be lost to perform this process that usually takes around ten minutes per lecture.The proposed solutions offers a bar code for the students to scan it via a scanner. The code along with the student identity taken by the application will confirm the

students' attendance. This way, the system will save not only time but also efforts that were supposed to be put by instructors during each lecture. It will speed up the process of taking attendance and leave much time for the lecture to be given properlyWhen we scan the barcode given by the college our admission number is displayed and the scanned admission numbers are sent to the respected faculty thus we .

2. RELATED WORK

Tracking student attendance and assets are two important problems in most universities since these are parts of the evaluation process for students and annual audits for university assets. While there are many methods in the literature to solve the student and assets tracking, we choose barcode technology because it is cheap and easy to implement. In this paper, we start with a historical overview of the beginning of the use of barcode technology and identifying some of its types. Bernard Silver and Norman Joseph Woodland invented the first optically scanned barcode, introduced the first-ever barcode, which looks like a bullseye. In 1952, they developed the barcode and reduced the cost of the system and registered a patent. Later, they developed solutions to automatically read product information during grocery checkout for the food chain

Food Fair. Since then, the barcode project has widely spread.In the 1970s, a Universal Product Code (UPC) was scanned for the first time at a grocery store market in the United States. The automotive industry and US Department of Defense (DoD) adopted another barcode standard Nowadays, barcodes are used on most goods and materials. The barcode technology's key features are easy touse, low cost, and its widespread use in various fields including products and services. Barcode technology uses optical scanners to read data such as numbers, letters, images, and locations. It can be a one-dimensional code or two-dimensional code. One-dimensional code is designed in the form of black rectangle bars called barcode with limited features. However, two-dimensional code is designed as boxes, hexagonal shapes, and other geometric shapes with many features.

3. IMPLEMENTATION

A student attendance management system helps to track and store the attendance data in real-time. In many schools, especially the higher grades, students manipulate the daily attendance with proxies, buddy punching or tampering of records in a matter of concern. Using this system with an attendance module makes it virtually impossible to fake attendance, as each information is unique. This ensures that

the attendance is accurate with no opportunity for student manipulation. It also improves the punctuality and the discipline of the students. it allows to eliminate duplicate data entry and errors in time and attendance entries, Improve visibility to track and manage student attendance & absentee across multiple campuses.

The project seeks to follow the following steps:

➢ To design a system to track the attendance of the students.

➢ To use barcode scanner and scan the admission numbers.

➢ To send intimation to the faculty via message to check the students are present or not.

➢ It also helps us know whether the students are in time to the institution or not.

Currently, two manual methods are used for taking the student attendance and record the information of students. In the first method, the instructor calls student's name by name during class and record the attendance. Later, after class, the instructor enters the recorded data to university . Edugate is a portal provided by the university which offers teaching and learning resources to instructors and students. It works as a database for the university administration who keeps

students' data which can be later used for retrieval and management purposes. The second method, the instructor, during class and start calling the student's names and record absent students by clicking on the designated box, then the instructor submits the data and logout. Both methods are time consuming especially when you have a class of 60 students or more. However, the first method takes more time comparing to the second method. The second method requires a good internet connection during class, otherwise the student attendance may take more time or cannot be completed. In this case, the instructor uses the first method and should have a student list with him as a backup to complete the student attendance process.

The project is a system that takes down students' attendance using barcode. Every student is provided with a card containing a unique barcode. Each barcode represents a unique id of students. Students just have to scan their cards using barcode scanner and the system notes down their attendance as per dates. System then stores all the students' attendance records and generates defaulter list. It also generates an overall report in excel sheet for admin. Such kind of application is very useful in school as well as in college for daily attendance.

4. EXPERIMENTAL RESULTS

In this section, we will discuss the experimental works conducted during the research work. First, we will explain how barcode can be used for student attendance in a real classroom within the college of engineering. Second, we will explore how barcode can be used for asset tracking of college devices, equipment, and furniture. Student Attendance Currently, two manual methods are used for taking the student attendance and record the information of students. In the first method, the instructor calls student's name by name during class and record the attendance. Later, after class, the instructor enters the recorded data to university Edugate. Edugate is a portal provided by the university which offers teaching and learning resources to instructors and students. It works as a database for the university administration who keeps students' data which can be later used for retrieval and management purposes. The second method, the instructor, login to Edugate during class and start calling the student's names and record absent students by clicking on the designated box, then the instructor submits the data and logout. Both methods are timeconsuming especially when you have a class of 60 students or more. However, the first method takes more time comparing to the second method. The second method requires a good internet connection during class, otherwise the student attendance may take more time or cannot be completed. In this case, the instructor uses the first method and should have a student list with him as a backup to complete the student attendance process. Now we will discuss the conducted experiment for taking the student attendance with the help of barcode technology. After installing the required applications and software packages (Zint Barcode, Barcode Active program, and Excel), the smartphone and the laptop can be used to conduct the experiment. We took one of the regular classrooms in the college of engineering as an example to conduct the student attendance experiment. The experiment was conducted without the need to generating a barcode because the student ID already has a barcode label. Figure 2 shows the steps of taking student attendance while they are entering the classroom. We used the smartphone, which was linked to our laptop via Wi-Fi, each. Each student must scan the embedded barcode in student ID through the smartphone in a few seconds and get seated

5. CONCLUSION

The proposed solution offers a QR code for the students to scan it via a scanner. The code along with the student identity taken by the application will confirm the students' attendance. This way, the system will save not only time but also efforts that were supposed to be put by instructors during each lecture. It will speed up the process of taking attendance and leave much time for the lecture to be given properly.

When we scan the barcode given by the college our admission number is displayed and the scanned admission numbers are sent to the respected faculty through message using the gsm module.

6. REFERENCE

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