Issues with Manual Attendance Management: Survey, and Literature Study

Abstract

1. Attendance are mandatory in most of the schools and the university.
2. Takes lot of time to manage the attendance manually.
3. Especially when the class size is large. Time wasted proportional to class size.
4. With the advancement in the technology, we can solve the problem more efficiently.
5. Mobile phones and Laptops are the most widely used gadgets among students.
6. Technologies such as NFC, GPS, QR Code, and Facial recognition can be used along with these gadgets to automate the attendance management.
7. Results - saves lot of time, ease of use, and unsupervised.

I. Introduction

* These days, most of the class materials are available digitally. And, students prefer to study using these materials rather than attending the class in person.
* Manually checking each and every student presence manually takes lot of time.
* Randomly checking few students may save time but it’s not 100 percent foolproof.
* Signing up attendance sheet by all the students. Easily cheatable as other students might provide proxy for the student who is not present in the class.
* RF Ids are used. But, again prone to proxy. Hardware requirements are more.
* Mobile phones and Laptops are widely used by the students.
* Mobile phones are equipped with technologies such as NFC, GPS, Camera.

II. Technologies

1. NFC
2. GPS
3. QR Code and Camera

III. User Survey

* Surveyed 50 students
* What percentage of your teachers/professors have taken attendance in school and college?
* We wanted to know how many teachers have taken attendance seriously. And, made sure that students are attending the class regularly. And, wanted to know how many teachers/ professors would be benefited from the automated attendance management system. The collected data could be used in many ways. To allow or not allow students for the final exam. Or, used towards the grade.
* Have you ever attended the class just to satisfy the attendance requirement?
* Wanted to know what percentage of the students would miss the class if there is no attendance system or the attendance system with flaws that we discussed earlier.
* How much time is wasted in taking attendance? Answer format: (Average time taken, number of students in the class).
* There different factors that affect the time wasted to record the attendance. Factors such as Type of method used, speed of the professor, etc., Through this question, we will get a rough average estimate of the time wasted for a class of fixed size.
* What types of attendance system have you experienced?
  + Manually calling out each roll number/student name
  + Manually calling out few random student's name/roll number
  + Quiz based
  + attendance Clicker
* Which type of attendance system is used and how widely used. There are different drawbacks with each method as discussed earlier.
* How often do you forget to carry your phone or tablet (or it is switched off) ?
* Phones and tablets are some of the widely used gadgets and could be used to automate the whole attendance management process. We wanted to know how widely it is used by students and available to them inside the classroom.
* Do you carry laptop to your class regularly?
* Besides phone/tablet, Laptops are widely used gadgets. And, we wanted to know how widely it is used. If it is widely used, we believe it could be used one of the ways to automate the attendance management system.
* Please select all the options available in your phone
  + NFC
  + GPS
  + Bluetooth
  + Browser
  + Camera
* There are so many different ways to solve the discussed problem using technology. As our primary focus is to solve the problem using the above mentioned technology. We wanted to know what percentage of the people have phones with the above mentioned technologies.

IV. Data Analysis and Interpretation

V. Literature Review

1. NFC
2. GPS
3. QRCode

VI. Conclusion