

Blueatt

Bluetooth Based Attendance Checking Software

Team 35

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1. Problem Statement

Attendance taking in a college lecture hall is no simple task, there is still the use of attendance sheets and even roll call. While some of the classes use I-clickers, there are two issues: first, it's confusing for non-technical instructors to use; second, some might only want to take attendance instead of quizzes. We will provide a bluetooth device-based software to take attendance based on the student's bluetooth devices

2. Background Information

The Problem

No simple yet effective attendance system that is easy to use for instructors and intuitive for students. Other methods of attendance are not scalable to large class rooms and lack measures to prevent inaccurate reporting.

Audience

Our target audience for Blueatt is an university-level academic setting for instructors who want a simple yet easy to use attendance tracking software.

Similar Platforms

Two similar platforms for attendance taking procedures are iClickers and attendance sheets. The i-Clicker is a location and frequency based attendance taking method that requires students to register for courses with their ID number and utilizes quiz questions as a means to track attendance. An attendance sheet is a piece of paper that is passed around the classroom and students physically sign their name on the sheet to indicate their attendance.

Limitations

The limitations for the i-Clicker is that it can be confusing to use for non-technical instructors and it needs an independent device which is expensive and easy to lose. A limitation for the attendance sheet or roll call is that it takes a lot of time and is very error-prone. Also attendance sheets have no way of preventing students from signing other students in.

Solution

We will fix these limitations by making the software very intuitive and easy to use and not requiring extra hardware by the students. Also the attendance will be taken within minutes via bluetooth without requiring any effort from the instructor, allowing for his/her focus to be on teaching during the whole period.

3. Requirements (Backlog)

Functional:

1. As an instructor, I would like to store student's information in the software
2. As an instructor, I would like to get a quick reading of student attendance
3. As an instructor, I would like to select which class is in session
4. As an instructor, I would like to connect the scanner to a computer quickly
5. As an instructor, I would like to select the intervals to periodically check for bluetooth signals
6. As an instructor, I would like to view the percentage of attendance of each lecture
7. As an instructor, I would like to select the way to get the information, such as emails or instant report
8. As an instructor, I would like to view the tendency of a student's attendance during the semester graphically
9. As an instructor, I would like to get notifications on if the scan is successful or not
10. As an instructor, I would like to only receive information on students in the class
11. As an instructor, I would like to manually add/delete/modify student's attendance
12. As an instructor, I would like to be able to add or remove a student from a class
13. As an instructor, I would like to be able to edit student's information if necessary
14. If time permits, as an instructor, I would like to allow software to scan automatically at a given time everyday
15. As a student, I would like to use general bluetooth devices to connect to the scanner
16. As a student, I would like to have my attendance taken just by bringing bluetooth device
17. As a student, I would like to register my bluetooth device for my Purdue username via phone app
18. As a student, I would like to register a new device to my same Purdue username if I get a new device
19. As a student, I would like to receive a notification that my attendance has been recorded
20. As a student, I would like to, see my attendance trends and historical data
21. If time permits, as a student, I would like to use fingerprint as authentication of attendance
22. If time permits, as a student, I would like to create app that turns on bluetooth based on time and location
23. As a developer, I would like to get user feedback
24. As a developer, I would like to store student information securely
25. If time permits, as a developer, I would like to handle troubleshooting

Non-Functional:

1. Program that is very simple and easy to use
2. Compatible with any bluetooth device
3. Program takes attendance within 3 minutes after starting to scan

4. Be able to handle up to a 400 person lecture hall
5. Create a simple and intuitive design that is easy to use yet functional