Efficient and Smart Attendance System using Wi-Fi

Prajyot Arun. Tingre¹ Jay S. Fursule² Ichchanand Pramod Kasture³ Mukesh Vasudev Tayade⁴ Harshal Jugalkishor Jaiswal⁵

¹,²,³,⁴,⁵P. R. Pote College of Engineering and Management, Amravati, Maharashtra, India

Abstract—Marking attendance in any organization used to be troublesome due to use of pen and paper scheme. Until today, most lecturers in universities are found still using the conventional methods of taking students’ attendance either by calling out the student names or by passing around an attendance sheet for students to sign confirming their presence. In addition to the time-consuming issue, such method is also at higher risk of having students cheating about their attendance, especially in a large classroom. Therefore a method of taking attendance by employing an application running on the Android platform is proposed in this project. This application, once installed the student list can be provided individually or from already created excel sheet. Based on the provided list of students, the professor android hotspot used to connect the present student device wifi. Professor android device will then act like a scanner to scan each of the student android device MAC address using wifi manager class, to one by one confirm and verify the student’s presence. The updated attendance list is then stored locally in the respective professor’s android device. And can also be saved as a file to be transferred to a PC later on. This system will help to eliminate the current problems, while also promoting a paperless environment at the same time. Since this application can be deployed on lecturers’ own existing Android devices, no additional hardware cost is required.

Key words: WiFi, WiFi Hotspot, Mac Address, Local Storage

I. INTRODUCTION

Attendance is a vital part of daily routine in educational institutes, offices and many other organizations. In schools and colleges this attendance marking is done manually but with advent of new technologies like smart phones, iPads, tablets, palmtops the world is just a click away. Today, we need not use pen and paper based attendance registers instead we can use very easy and efficient methods like taking e-attendance. Based on this idea we have made a project which is an Android based mobile application Called “Efficient and smart attendance system using wi-fi”.

Our project is an efficient and user friendly Android mobile application for an Attendance Monitoring. The application will be installed on the user’s smart phone. Professor will first have to sign up in this application and then the professor can take attendance any time they wish by first logging in the application. Then for taking attendance the professor need to turn on their device hotspot to let the student connect to it. Once student get connected to the hotspot there MAC ADDRESS will be check with stored student MAC ADDRESS for authenticating the student ID. Once the authentication done successfully the attendance of the student will be mark as present. After attendance has been taken lecturer can store it in its local device storage. If it needs in future the it can also be send to pc as a file. For enrolling the name of students at first time the professor just need to turn on there device hotspot and let the students connect to it. All the students connect to the hotspot are enroll in the professors attendance sheet. The name and information like device MAC ADDRESS will be fetch from the device, as the student have already sign up to the application. Professor have privilege of adding or deleting the student information from the sheet. From student side for marking the attendance they just need to connect to respective lecturer hotspot when they turn it on. When the student get successfully authenticate they will get present message on there screen. Student can request to professor to see there monthly attendance. With this project we aim at reducing the manual efforts taken daily by the lecturers the time being wasted and also we want to emphasize on reducing the paper wastage that happens daily.

A. Recommender overview:

In order to overcome the drawbacks in existing system, an android application has developed for daily attendance of students. The system consists of two actors one is student and another is Faculty, faculty is a super user who can create, delete, or update the information of Student, Class details etc. also Faculty user can able to update an Attendance which has been taken in the XL Sheets. It is made easy to access the attendance information of a particular student. The information regarding the attendance is sent store and can be sent to pc of a related class in the form of XL sheet. This application is helpful in evaluating the attendance eligibility of a student. The purpose is to computerize the tradition way of taking attendance and generating of report automatically at the end or between of the session.

B. System information flow

In this application faculty first need to login to their respective account. After that they have to select class name, section, and the subject they going to take attendance for. Fig 1[1].The system flow work as follows:

Fig. 1: System Flow Diagram

Initially faculty login into the application with login ID and PASSWORD they have set at the time of registration.
After the login process successfully authenticated, faculty need to select the respective department, class name (year) and the section of the class for further process of attendance.

After selecting the class for taking attendance faculty have to click on the button given in the app UI. Which turn on the faculty’s device hotspot to let connect the student to it.

Here the role of student comes into play. Now student need to open there application and click on the previously register subject button. Which let turn on student’s device WIFI. And then application automatically connect to the hotspot.

1) Initially faculty login into the application with login ID and PASSWORD they have set at the time of registration.
2) After the login process successfully authenticated, faculty need to select the respective department, class name (year) and the section of the class for further process of attendance.
3) After selecting the class for taking attendance faculty has to click on the button given in the app UI. Which turn on the faculty’s device hotspot to let connect the student to professor device.
4) Here the role of student comes into play. Now student need to open there application and click on the previously register subject button. Which let turn on student’s device WIFI. And then applications automatically connect to the hotspot.
5) The students whose MAC addresses are register with the faculty’s device are authenticating successfully and the student mark as present. And present message also send to student device.
6) Finally the present student attendance is store and updated to the XL sheet in the local storage.

C. Working of Hotspot scanning

When the application start and faculty login to their account successfully, by clicking the scan button the hotspot of device start and search for the nearby wifi connection.

Faculty device has already register student Mac id’s as student identification in the class. When student start there wifi connection they get active student list in the class, this list then check with the stored student list in the faculty device. The group of student connects to the hotspot at a time. This student mark as present in the list, whose match are found in the active list of student. After marking the attendance the student get automatically disconnect and the another group of student ready to connect to mark there attendance. And this process goes till all present student get mark in the sheet. After this the attendance sheet gets updated to current date present student list and store into the local database of the device. This sheet now can be exported to pc in the form of XL sheet for future purpose.

II. CONCLUSION

We have tried to make the Smart Attendance system as easy as eating a toast from the plate. The application is user-friendly with several features and some very basic small requirements. No need to maintain several separate record and manual calculation. 24*7 availability of information more secure than traditional attendance system. A step towards the futuristic e-school and e-colleges. In one sentence it is simple, handy, effective creative and advance application that bring ends to the time consuming problems to take attendance of each student manually.

REFERENCES


Efficient and Smart Attendance System using Wi-Fi

(www.ijsrd.com)

Association of Computer Science and Information Technology - Spring Conference.


[7] The Design of Wireless Fingerprint Attendance System by Zhang Yongqiang, LIU Ji
