Smart Attendance Management and Learning System

Tufail Ahmed M. Siddique, Priyanka G. Shelake, Prof. H. B. Sale.
Bharati Vidyapeeth College of Engineering.
Sector-7, C.B.D, Belpada, Navi Mumbai-400614, India

Abstract—An Education system in India has developed in past many years due to the advancement in the technology. Online classes, online video conferencing are some of the examples of modern trends in educational system. These applications help the colleges to move forward quickly, fulfill their vision and accomplish their goals, online. The basic idea of this project is to implement Android based application for attendance management system for advancement of educational system. Our system will contain applications such as online study material, online attendance record, parent intimation system using Android applications. Through this system teacher will take attendance through Smartphone and keep record of students. This system will notify the students if their attendance goes below the threshold in the form of an SMS.

Keywords: Android, Attendance management, E-learning, smart phone, etc.

1. INTRODUCTION
Nowadays, mobile devices have become very important part of students life especially in higher studies. The rapid progress in mobile technology has created a new area which is known as mobile learning. With the development of this Android application student preferred to use mobile devices as a technology support educational tool.

The system Smart Attendance Management and Learning System is designed because notes dictation in a class is difficult also there are problems to maintain the attendance manually, there are chances of false marking of attendance due to entering attendance manually and due to more paper work. Evaluation and also generation of report is tedious and time consuming. Therefore, this system is developed where teacher can upload notes on server that is easily accessible to student by their own smart phones. Another application that is provided by this system is smart attendance evaluation and report generation. It facilitates to access the attendance information of a particular student in a particular class. The information is sorted by the operators, which will be provided by the teacher for a particular class.

This system will also help in evaluating attendance eligibility criteria of a student. This system enables student to learn anywhere, anytime and at their own convenience.[1]

II. Types of Existing System:

1. Manual Attendance management systems:
   Manual attendance is a conventional method of taking attendance by calling names or signing on papers. For instance lecturers with large class may find hassle of having attendance sheet being passed around the class and manual signing of student is burdensome and most likely distract them from teacher. It is time consuming process and also inefficient due to more chances of malfunctioning as student can purposely sign another students name. Also teacher may loss attendance sheet, therefore this process is very inefficient. [1]

2. RFID based attendance management system:
   RFID stands for Radio Frequency Identification. Here, to manage automatic attendance, RFID cards are given to the student’s for marking their attendance. Attendance is marked through RFID reader of range 125 kHz. RFID scanner is a plug-play USB device that has only one task- If a valid task is swiped in front of the scanner, the RFID tag is read and its unique code is pasted on any text field on the active window of the screen. The database application used is MS SQL Server. So database file is of type .mdf. On client side the application is just loaded as a website where you can check the attendance of the student based on their unique RFID number. [2]

3. Bluetooth based Attendance System:
   In Bluetooth based attendance system, attendance is being taken using instructor’s mobile phone. Application software is installed in instructor’s mobile phone enable it to query students mobile via Bluetooth. It transfers students mobile Media Access Control (MAC) address to the instructor’s mobile phone and presence of students can be confirmed.

The problem of this proposed system is students phone is required for attendance. In case of absent
student if his mobile is given to his friend and if kept it in coverage area then also his presence would be marked. [3]

III. Architectural Diagram of Proposed System:

The basic blocks of our system is shown in the following Architectural diagram.

In the above architecture diagram there are three main blocks that is Admin, Teacher and Student. All are linked with the Database for authentication of user which will be done by entering username and password. The user will be teacher, student or admin. Database is then linked with the server for storing and managing the data onto the server’s database. The teacher will take the attendance through their own mobile phone and upload that record on web server. On the server side, percentage attendance will be automatically calculated and report will be generated accordingly.

IV. System Analysis:

Our system Smart Attendance Management and Learning System has 3 modules,
1. Attendance Module
2. Notification Module
3. Notes Module

We are designing separate interfaces for teacher, admin and student.

1. Students:
Login phase: The student has to enter username and password for authentication purpose.

View defaulter list: The student will be able to view the defaulter list to see his/her name is in the list or not so that he/she can manage the attendance. This helps the student to keep watch on his/her attendance.

View notes: The student will be able to view notes on their phones uploaded by the teacher.

Notification: The student will receive the message if he/she is absent. This works as the acknowledgement of the marked attendance to the student.

2) Teachers:
Login phase: The Teacher has to enter username and password for authentication purpose.

Mark attendance: The teacher can mark the attendance of the student using this app after the attendance absent student will get the notification about attendance and also the notification to the parents will be send if student is having attendance less than 75%.

View the attendance details of student: The teacher can view the attendance detail of the students as she/he can take any action regarding it.

View defaulter list: The teacher will be able to view the defaulter list of the students.

Upload notes: The teacher will be able to upload notes.

3) Admin:
Login phase: The Admin has to enter username and password for authentication purpose.

Add/Delete User: The Admin can add or delete the student’s or teacher’s account.

View defaulter list: The Admin will be able to view the defaulter list of the students.

IV. Conclusion:

To overcome all the drawbacks of the existing system Smart Attendance Management and Learning System is required where students can learn anywhere anytime as per their own convenience. Through this system timely updates of students can be sent to the students as well as parents. Attendance marking and report generation becomes easy. There are less chances of malfunctioning. Through this system the students can use mobile phones as an educational supported tool. So the system aims at improving the existing system and providing an efficient way for managing attendance and learning.

V. References:

[1] Rakhi Joshi, V. V. Shet, S. B. Somani “Android Based Smart Learning and Attendance Management System”, International Journal of
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