

E - School Android Application

Urvashi Kohpare

*Department of Computer Science & Engineering
DMIETR, Wardha, India*

Samena Shambharkar

*Department of Computer Science & Engineering
DMIETR, Wardha, India*

Suchita Raut

*Department of Computer Science & Engineering
DMIETR, Wardha, India*

Abhilasha Awachat

*Department of Computer Science & Engineering
DMIETR, Wardha, India*

Kavita Ashtankar

*Department of Computer Science & Engineering
DMIETR, Wardha, India*

Abstract

From last decade due to the development of the technology an education system in India has become so advanced. Smart class, video conferencing is some of the examples of modern trends in educational system. These applications help the institute to move forward for quick growth, fulfill their vision and accomplish their goals, E-way. The core idea of research project is to implement application based on android for attendance management system for advancement of institution and educational system. We have seen over the years that the process of manual attendance has been carried out in schools, colleges and institutions. Such monitoring and maintenance of the student attendance using traditional approach is really a hectic process, because of using pen and paper. The problem with this approach is that it requires lots of paper work that is the part of our non-renewable natural resources. We are in the digitalization era where we have to think about sustainable development. We are developing the android application (e-school) which provides an alternate way. E-school application record the attendance using android mobile phone, maintain the attendance in database for easy and proper evaluation of attendance. Application also provide services like generating result, maintaining the fees structure and sends the sms to parents because parent can only get the information about their ward after the interaction with teachers and it is not possible to them to visit the school monthly. So, we tried to bring the system which enables parent to receive the academic performance of their ward of regularity on daily or monthly basis.

Keywords: Android, Attendance, Database, Monitoring, SMS

I. INTRODUCTION

21st century is known as the age of science and technology. Technology has given us almost everything. Because of technology people have an easy way of life. It is rapidly growing to solve and to satisfy the human wants. Every aspect in the world is getting modernized or automated leaving behind all the primitive methods. One of the primitive method of, management and maintenance of student information is cumbersome task for any institution. The student's academic information consists of monitoring their performance and progress periodically which seems to be a huge workload on lecturers to handle and update on the progress of subjects for the respective classes. The traditional way of attendance is, recording manually in a log book and then converting into desktop application. Such system can be tedious process and may often lead to errors while generation reports. Apart from this, sometimes the attendance sheets are lost, misplaced or information wrongly entered due to various reasons. But Now-a-days things are done over just a click of your computer or mobile and so automated modern system in schools, colleges and other education system is the need of the hour. Therefore initiative has been taken to develop and deploy such a system at educational level which can reduce the manual work and to achieve more efficiency in managing student's information and minimize the gap between teachers and parents of the students.

II. REVIEW OF LITERATURE

A. Computerized Attendance System

A desktop application developed by S. K. Jain, U. Joshi, and B. K. Sharma (2010), in which all the list of registered students in a particular course will be displayed when the lecturer start the application. The attendance is done by clicking a check box next to the name of the students that are present, and then clicked on register button to mark their presence. But it is limited upto only attendance tracking.

B. Bluetooth Based Attendance System

In 2013, Vishal Bhalla, Tapodhan Singla, Ankit Gahlot and Vijay Gupta, proposed such a system which can take attendance through Bluetooth. Hence in this project, attendance is being taken using instructor's mobile phone. Application software is installed in teacher's mobile which enables it to query student's mobile via Bluetooth connection and through transfer of student's mobile telephone Media Access Control (MAC) addresses to the instructor's mobile system, presence of the student attendance can be checked. The problem of this proposed system is student's phone is required for attendance. If student didn't carry the mobile phone with him without mobile phone his presence will not considered in Bluetooth Based Attendance System. The second problem of this proposed system is if student is absent and his mobile is handover to his friend then also present is marked, so presence of student is not necessary only phone should be in coverage area.

C. NFC based Attendance System

(Media Anugerah Ayu, An NFC Supported Attendance System in a University Environment", 2014) In this paper author presents the implementation of an (AMS) Attendance Management System for multiuser environment that is based on Bluetooth and NFC technologies. It uses fingerprint & the Bluetooth address of the NFC enabled phone of the user to authenticate the identity of the user. But in this case, to mark presence of student they must have NFC enabled phone.

D. Fingerprint based Attendance System

In 2013, Seema Rao and Prof.K.J.Satoa proposed one new system for employee attendance using fingerprint. This system checks one fingerprint template with all templates stored in the database, like wise it checks for all employee which will take more time. The main problem in this is that it is time consuming as it checks one's fingerprint with the entire template stored in the database. (Neha Verma, Komal Sethi and Megha Raghav, 2013) Fingerprint recognition is based on identification system which is designed for student identity. This system is being designed for taking attendance in institutes like NIT Rourkela. In this system, by partitioning database fingerprint template matching time is reduced. In this system all students of every class has to stand in a long queues to make attendance, again this system is suffering from fingerprint device , and one most important disadvantage is that it is work within short distance.

E. Iris Based Attendance System

In 2010, Seifedine Kadry and Mohamad Smali have proposed one system. In this paper, a wireless iris recognition system is designed and implemented using Daugman's algorithm (Daugman, 2003). The system based on biometrics and wireless technique resolves the problem of fictitious attendance. It can make the users' attendances more easily and effectively. The system is based on RF wireless technique, it is too expensive. In this system all students of every class has to stand in a long queues to make attendance, and most important disadvantage is that it is work within short distance and it is expensive system.

F. Face Recognition based Attendance System

(Muthu Kalyani.K and Veera Muthu.A, 2013) has proposed Face Recognition based Attendance System, where we use a CCTV camera to be installed at the way to enter classroom, which will directly captures the image of the person and verify the observed image with the face database using android enhanced smart phone. It is typically used for two purposed. First is to marked attendance of student by comparing the face images produced recently and secondly, recognition of human who are strange to the environment i.e. an unauthorized person. Hence for verification of the image, a new emerging trend 3D Face recognition is used which claims to provide more accuracy in matching the image database, The main problem of this system is recognized face will compare with all the entire database for authenticate the individual attendance.

III. SYSTEM ARCHITECTURE

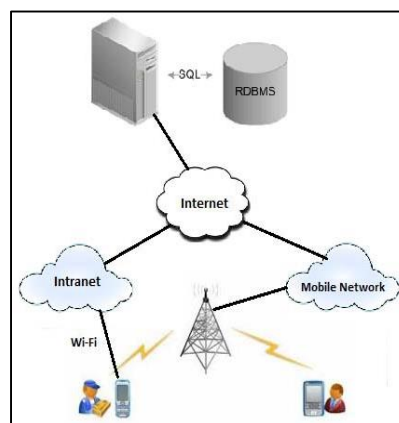


Fig. 1: Architecture for e-school management system

In proposed plan we have design a system i.e. Student attendance system to keep track of attendance including marks and fees structure for easy and proper evaluation of student information.

Project architecture is divided into two parts i.e. front end and back end. Front end is categorized in client side and server side, while back end contains MySQL database. Client module is act as individual module while server side and database are combined together to form server side interface.

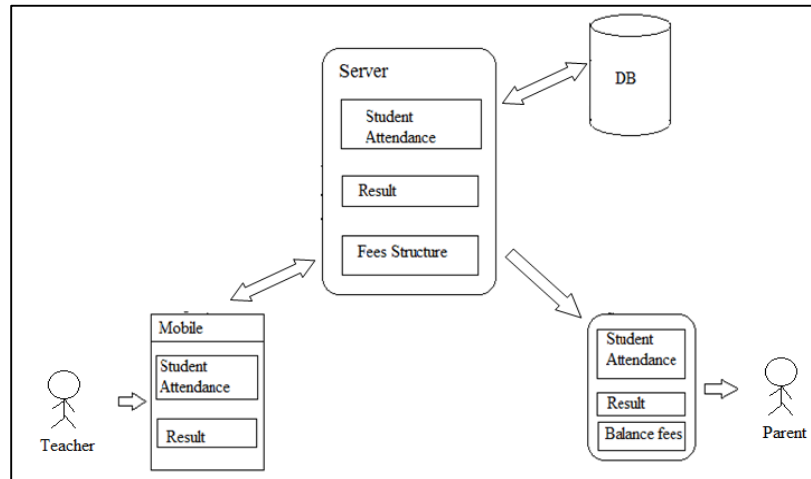


Fig. 2: Block diagram for e-school management system

A. Client Side

In system, Android based Application and its hardware part act as client. To use the application, a teacher will first need to install the apk file on their Android device. Once the application is started, the teacher will need to log in onto the application by supplying their user id and password. Upon a successful authentication, the user will then be redirected to another page that prompts them to select the class and section. The list of students registered in the selected group will be downloaded into the Android device from an online database server. Based on the downloaded list of students, the application can then be used to check student attendance by calling one by one. Once attendance is completed, the updated attendance list can then be uploaded by the teachers back to the online database server. Teachers also can enter the test marks through this android device.

B. Server Side

At the server side the MySQL database can be maintained. For the purpose of demonstration of this application, we have used the WAMP server using phpMyAdmin service. Server will store the data in the database.

The online database plays an important role in the system as without it, the user authentication will fail along with the data extraction process. The database is composed of a number of tables, which are used to store different groups of records required to manage the student details including attendance, marks, report card. Basically there are four relational tables specifically named as; 'groups', 'teachers', 'class' and 'students'. The 'lecturer' table stores the staff's information such as the staff username, password and name, while 'class' table stores the details of available classes, sections. The online web server can be deployed on a computer, which is connected to the Internet. To allow public access, the server should be configured with a public IP address. This server will be receiving requests from the client applications that are running on the Android devices, which also require Internet access, especially when downloading list of students from the server and when uploading updated attendance records.

Retrieval algorithm is used to find the class attendance, student details that satisfy information need from within large collections of school management data (usually stored on computers). Information retrieval is a problem-oriented discipline, which concerned with the problem of the efficient transfer of information between human generator and human user.

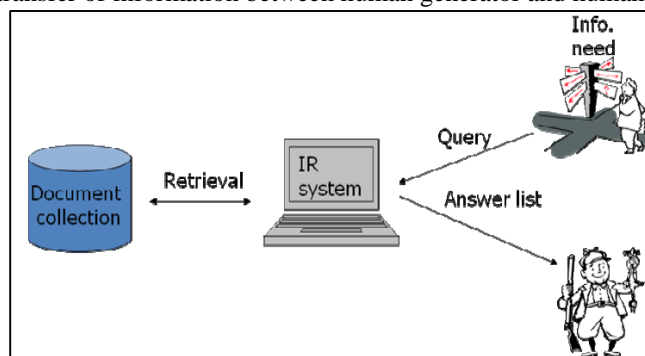


Fig. 3: Retrieval of information

C. Modules

1) User module

The purpose of user module is to login a user who has already registered earlier so that he/she can take attendance. The login screen asks two details from user that is username and password. Only when the lecturer enters the correct user-id and password a successful login message will be displayed and he/she will be able to login. If user is not registered then they have to register themselves first by using required data and able to take the attendance which directly upload to the server and hence it reduce the pen paper work.

2) Attendances Entry Module

In attendances module the class teacher will take attendance everyday by swiping over a student name to mark him absent or present. Here teacher needs to select the details such as class, section Attendances of students will maintain on monthly basis and store in centralized server, further which will used to send attendance to the guardian/parent through sms service.

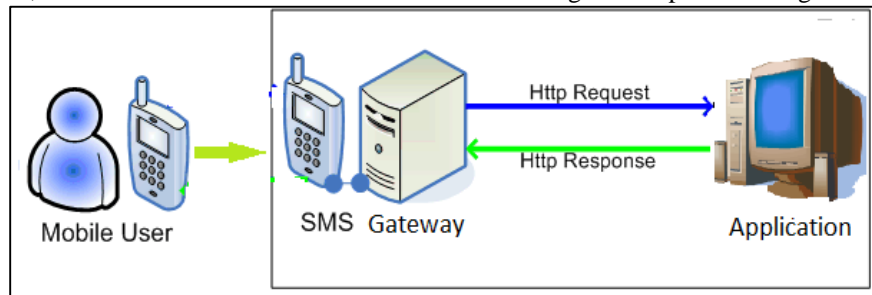


Fig. 4: Overview for sending sms using gateway

3) Result and Fees Structure

It includes the automatic submission of marks by subject teacher. Calculation of marks according to teachers preference i.e. average of two tests. It generates the academic and co-scholastic result according to given structure. It also prints the report card with short instance; also it contains the record of annual fees of students. A sms will be sent to registered mobile number on receiving fees and if fees are pending. Automatic fees receipt generation.

IV. CONCLUSION

This project will help the teachers to reduce their workload by reducing the time and calculations required to update the attendance manually. Students and their parents will also view the attendance, marks and any other details via SMS. This project reduces the communication gap between teacher and parents by sending SMS to parents. The android application will mark the attendance, enter the marks to database. This new attendance system also reduces the work load of the administration staff.

REFERENCES

- [1] Vishal Bhalla, Tapodhan Singla, Ankit Gahlot and Vijay Gupta, "Bluetooth Based Attendance Management System", International Journal of Innovations in Engineering and Technology (IJET) Vol. 3 Issue 1 October 2013, ISSN: 2319 – 1058.
- [2] Seifedine Kadry* and Mohamad Smaili, "Wireless attendance management system based on iris Recognition", Scientific Research and Essays Vol. 5(12), pp. 1428-1435, 18 June, 2010, ISSN 1992-2248.
- [3] APARNA BEHARA and M.V. RAGHUNADH, "REAL TIME FACE RECOGNITION SYSTEM FOR TIME AND ATTENDANCE APPLICATIONS", International Journal of Electrical, Electronics and Data Communication, Volume- 1, Issue- 4, ISSN: 2320-2084.
- [4] MuthuKalyani.K and VeeraMuthu.A, "SMART APPLICATION FOR AMS USING FACE RECOGNITION", An International Journal (CSEIJ), Vol. 3, No. 5, October 2013, DOI: 10.5121/cseij.2013.3502.
- [5] "Mobile Phone Based Attendance System", by Shraddha S.Chawhan1,IOSRJournal of Computer Engineering (IOSR-JCE) e-ISSN:2278-0661, p- ISSN: 2278-8727 Volume 10, Issue 3 (Mar. -Apr. 2013), PP 48-50 www.iosrjournals.org.
- [6] Ichimura Takumi, Kamada Shin: Attendance Management System with NFC(Near Field Communication) on Nexus, Sympo- sium on Mobile Interactions 2013, pp.139-140, Mar. 2013.
- [7] Nippon Systems Development, Attendance management web system <http://www.systemgear.com/product/pdc300/school.html> (Accessed on Jan 16, 2015)
- [8] 'Student attendance through RFID and Bluetooth' -Mohd. Aahidan Bin Zakaria School Management Softwares, Digital School, Commercial product. <http://www.digitalschoolcampus.com/>