Android Application for Student Activity Register

P.Jessenth Ebenezer[1], M.R.Muralidharan[2,] S.Srikanth[3], E.Ramesh[4], Mr.S.Prabhu[5]

[1, 2, 3, 4]**Department of Computer Science and Engineering, S.A. Engineering College**

[5]**Assistant Professor, Department of Computer Science and Engineering, S.A. Engineering College**

Abstract

In this project, the lecturer's workload of maintaining the student's academic related information is reduced with the help of "ANDROID APPLICATION FOR STUDENT ACTIVITY REGISTER" which is a real time application. This application consists of various systems such as attendance system, mark entry system, auto calculation system, report generation system. To reduce the fake attendance it integrates the RFID technology which consists of RFID reader and the RFID tags. RFID reader reads the signal from the tags and calculate the total number of count in class. This count is cross checked with the attendance taken by the lecturers in the application. Mark entry system helps to maintain and update the marks taken by the students. Auto calculation system will help to calculate the cumulative attendance, internal marks, GPA and CGPA. Report generation system will help to generate report of the cumulative attendance, individual performance, class performance. Website login is provided for the lecturers, HODs and principal to generate reports. The primary advantage of this application is to reduce the manual work taken by the lecturers to maintain the student related information.

Keywords: Rfid Technology, Android Application, Smart Phone.

1.INTRODUCTION

The maintenance and management of student information is almost a tiring process in the educational institutions nowadays. Therefore an effective system for the management of student academic information such as their Attendance, Curriculum performance is required. Moreover the students also need to be updated of their performance periodically for their improvement in the Academics. The workload of the lecturers is huge when handling subjects for more than one classes. In the traditional way, first the attendance of all the students is recorded manually in a log book and then entered again in a desktop application. The same procedure is followed for recording the marks for each internal exam. Generation of reports on the information using such system is a tedious process which may often result in errors.

A smart phone based application using Android can be used to make this process more easier, secure and less error prone. Reduction of manual work and more efficient information management will be achieved through this system. Android is an open source Linux-based system developed by Google, and primarily aimed at mobile handsets and other portable devices. Android provides a Java-based development platform for applications which, like Apple, it likes to call 'apps'. The ability to deploy applications written in other languages remains uncertain, as does the suitability of Android for devices larger than a PDA. Java 2 'Micro Edition' (J2ME) is a Java-based application platform for mobile devices developed by Sun Microsystems, as it then was. Unlike Android it is not a complete platform, just a virtual machine (VM).

Basically Android has the following layers:

• applications (written in java, executing in Dalvik)

• framework services and libraries (written mostly in java)

o applications and most framework code executes in a virtual machine

• native libraries, daemons and services (written in C or C++)

• the Linux kernel, which includes

o drivers for hardware, networking, file system access and inter-process-communication.

2.LITERATURE SURVEY

2.1 Mobile Based Attendance Management System

Managing the attendance using mobile phones, provide an alternative way . Communication between teachers and the parent is also an important issue that should also be considered, because parent can only get the information about their ward after the interaction with

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teachers. Taking the attendance on mobile phones instead of traditional approach is one step forward to sustainable development. Doing the same work on mobile phones not only saves our resources but also enables the user to get easy and interactive access to the attendance records of student. The application that we are building can allow teacher or any departmental head to take the attendance through their mobile devices, manage records, inform to their parents or guardians to the status of his/her child of what actually they are doing it. The system is implemented on S60 Symbian platform.

2.2 Isams:Tracking Student Attendance Using Interactive Student Attendance Anagement System

System that is capable to record the students attendance using interactive input, generating the reports, viewing the students and lecturers profiles, and providing the students timetable. The system is also capable to generate the e-mail with user management functionality such as adding new user, deleting a user, registering a course etc. Students just scan the bar code on their matrix card, using bar code scanner and done, The students attendance is updated in real-time, as each attendance registration take place, The system is able to generate the attendance, reports in pie chart and statistic.

2.3. Online Students Attendance Monitoring System In Classroom Using Radio Frequency Identification Technology: A Proposed System Framework

Integration of ubiquitous computing systems into classroom for managing the students attendance using RFID technology. RFID technology can be a powerful tool in helping to manage student's attendance throughout the working school day and enhance classroom security. RFID technology has been applied to solve problems where it is necessary to take automatically record the movements and locations of students in a classroom of school/university environment. A real time intelligent system is implemented in conjunction with RFID hardware to record students' attendance at lectures and laboratories in a school/university environment. RFID is a technology that allows for a tag affixed on identity card to communicate wirelessly with a reader, in order for the tag's identifier to be retrieved.

2.4. A Novel Approach Of Mobile Based Student Attendance Tracking System Using Android Application

A secure framework for implementing different educational service mobile applications like, mobile attendance, mobile marks register etc. by using Android and java applications . The second part will leverage Near Field Communication technologies and gamification behavior approach to incorporate game mechanics into activity oriented learning systems. To update all the data through web server by using GPRS technology. The application offers reliability, time savings and easy control. It can be used as a base for creating similar applications for tracking attendance in offices or any workplace.

2.5. Rfid-Based Students Attendance Management System

RFID is an automated identification and data collection technology, that ensures more accurate and timely data entry. RFID is not actually a new technology; it only quickly gained more attention recently because of its current low cost and advances in other computing fields that open up more application areas. RFID combines radio frequency and microchip technologies to create a smart system that can be used to identify, monitor, secure and do object inventory. At their simplest, RFID systems use tiny chips called ―tags that contain and transmit some piece of identifying information to an RFID reader, a device that in turn can interface with computers. RFID has many applications as can be imagined and utilized the versatility of RFID in implementing functional and automatic student course attendance recording system that allows students to simply fill their attendance just by swiping or moving their ID cards over the RFID reader.

3.SYSTEM ARCHITECTURE

The system architecture has a smart phone with android OS, a web application , a database server and the user as its components. The android smart phone or tablet must use 3G or WiFi network for internet connectivity to ensure better performance. The user will login to the application through an android smart phone. The usertype is verified with the database server and access is given to the appropriate user. The web application also can be used to login and perform certain operations such as registration of users, generation of reports. The web application and the android application access data from a common Database server through the internet.

Fig 3.1 Overall System Design

4. RELEATED WORK

4.1 Modules

4.1.1. User Module

In this module we are authenticating the users by providing username and password. If username and password is valid then they will be taken to their screens.

4.1.2. Attendance Module

The Attendance module allows the Lecturer to enter the attendance of the students into the database. After login, the lecturer will select the year and section of the class. The list of students with their roll number is displayed. By default, all students are checked with present value. The lecturer can just uncheck the absent students and submit the attendance to the database.

4.1.3. Marks Entry Module

The marks scored by the students in internal exams are stored in the database through this module. The lecturer will login, select the type of the exam e.g., unit test, model exam and then the year, section and subject in the application which displays the students list. Now, the marks for each student is entered and submitted to store in the database.

4.1.4. Report Generation Module

This module allows the HOD and Lecturer to generate various reports on the student attendance and marks data. To generate reports, the user must login through the web portal and select the report type. Then reports are imported to the system as Excel sheets which can be printed later and used for analysis.

4.1.5. Auto Calculation Module

This module performs automated calculation of cumulative attendance, internal marks of students for each subject in the curriculum. The students can view their cumulative attendance, internal marks periodically and improve their performance if necessary.

5. FUTURE ENHANCEMENT
• Library management system module can be integrated.
• It is used to know the available books in library with the shelf number.
• The location of absentees can be tracked by developing GPS module.

6. APPLICATION

This Android Application can be used in Universities and Colleges, Schools, Training institutions etc.

7. CONCULSION

The designed system fulfills all the necessary requirements of the lecturers in maintaining the student related records. Students also can be benefited through this system. They can easily get the updates about their performance and parents also updated about their wards performance. It reduces the time and workload of the lecturers.

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