

# Mobile based Attendance Management System

V. Somasundaram\*, M. Kannan and V. Sriram

Department of CSA, SCSVMV University, Kanchipuram - 631561, Tamil Nadu, India;  
a.v.somasundaram@gmail.com, saikannan999@rediffmail.com,  
sriram48ram@gmail.com

## Abstract

The objective of this paper is to enforce some of the emerging technologies like mobile computing, Information and Communication Technology and advances in behavioral science studies to enhance and enrich the current educational system, since education technology in India has been modernizing in the recent years due to the development and penetration of information technology. The mobile technology has been chosen for this study. The methodology of this work is to develop an android based mobile attendance management system where attendance can be recorded via mobile devices using ASP.NET and SQL Server. Findings of this developed software stores, retrieves and deliver the information about the student information such as present or absent through mobile device. Results are very helpful to the organization to keep, track and maintain information about students also easy to deliver the report about the students to the concern parents. Further this work can be extended to keep the student's information regarding internal marks, semester marks and other activities involved in the organization.

**Keywords:** Attendance, Education, Information and Communication Technology, Mobile Computing

## 1. Introduction

In current scenario, 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. In order to reduce the manual work and to achieve more efficiency in managing student's information, a smart phone based mobile application using android can be applied to make this process more easy and beneficial in every way. The proposed system will store, retrieve and sent the student information to the concerned person.

In<sup>1-3</sup> developed an android based mobile application for attendance system. Through this project, teacher can easily

record the student attendance and reports also generated. In<sup>4,5</sup> developed an android based application for student activities such as maintaining attendance, maintaining and calculating students marks and it also provides report generation module. In<sup>6</sup>, discussed about functional and non-functional requirements specification for mobile based attendance management system for school level. In<sup>7</sup>, developed mobile based attendance management system using android and Java technology. It consists of four modules such as user authentication process, calling of web service, attendance marking process and display information about students. In<sup>8</sup>, proposed a framework for maintaining student attendance and also it tracks the illegal use of mobile phones during class hours.

In<sup>9</sup> developed a project for student attendance management using RFID and face recognition technology. In<sup>10</sup> proposed a project for mobile based staff attendance system. It will be helpful for staff members and administration members to enter, track and storing the information easily.

In<sup>11</sup>, proposed location based and attendance system to record and track staff arrivals in their office premises.

\* Author for correspondence

## 2. Drawbacks of the Existing System

- Manual maintenance of data
- Searching for any correspondence is difficult.
- Lack of SMS facility
- No attendance percentage calculation
- Portability

## 3. Objective of the Study

- To design and develop the android based mobile based attendance maintenance system.
- To implement the development system.

## 4. Methodology

This project is developed by using VB.NET and SQL Server. It is divided into two phases. In the first phase, feasibility study is conducted, requirement analysis is carried out to understand the need for the system and the necessary modules such as admin module, registration module, student module and SMS and airdroid module are identified and explored in section, in the design phase, requirements are converted into system design, it is shown in Figure 1. In the second phase, design is converted into coding, testing is conducted to ensure that the developed project is bug free and it meets the requirement specification. Finally developed project is installed and it is ready to use.

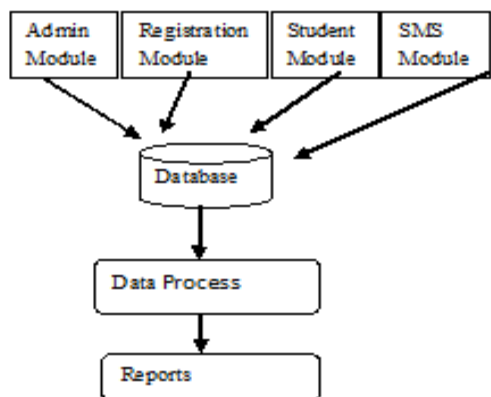


Figure 1. Overall system design.

### 4.1 System Requirements

#### Selection of software and language

Front end : VB.NET

Back end : SQL Server  
 Platform : Windows 8.1  
 IDE : Visual Studio 2010  
 Supporting s/w : AirDroid

#### Selection of hardware

Processor : Intel i5 core  
 Hard disk : 80 GB  
 RAM : 4 GB

Other hardware: Android Mobile with Airdroid Apps

## 4.2 Module Description

### 4.2.1 Administrator Module

This module is used to login for administrator, it have whole rights to monitor and manage the entire project, through this module, new information can be insert, update, view and delete.

### 4.2.2 New User Registration Module

This module is used to register the user information and it will be store in database. The information such as name, password, date of birth, department, phone no and email id are collected. The collected details are sent to the database for the purpose of login.

### 4.2.3 Login Module

This module is used to login for the student profile home page and will continues the other processes.

### 4.2.4 Student Module

This module can be used for student for registration. The information such as name, reg-no, gender, course, department, e-mail, father's name, mobile no. and address are collected and the collected information is stored in the database.

### 4.2.5 SMS Module

This module can be used to send SMS to their parents through way2sms.com.

### 4.2.6 Airdroid Module

This module can be used for receiving text messages from students about their leave.

## 5. Results and Discussion

The following Figure 2 shows the home page of Mobile Based Attendance Maintenance System. Through this page, existing users can login directly else new users can enroll into the system. Figure 3 shows the operation form where the student's details can be viewed. Figure 4 shows the new student registration form, once the student is registered they can send/receive the SMS from/to the concerned staff about the leave and reasons for leave. Figure 5 shows the process of sending SMS from the concerned staff member and from the student. Figure 6 and Figure 7 shows the process of receiving text messages from the students about their present status. Figure 8 shows the admin form where the administrator can view details about student status and it can transfer the student status to their concern parents. Figure 9 shows the detailed report about the student status



Figure 2. Login Page.

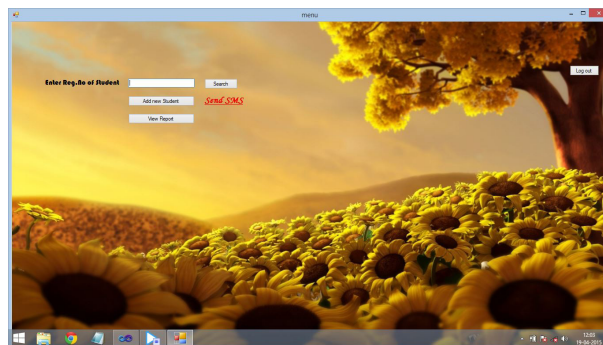


Figure 3. Operation form.

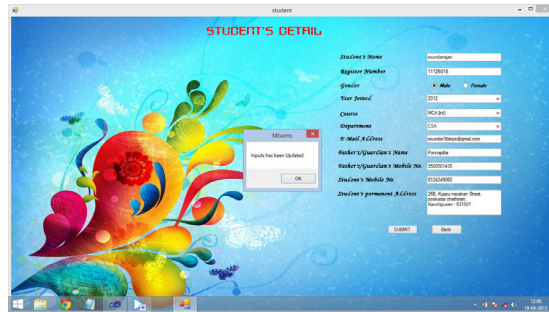


Figure 4. New Student Registration form.

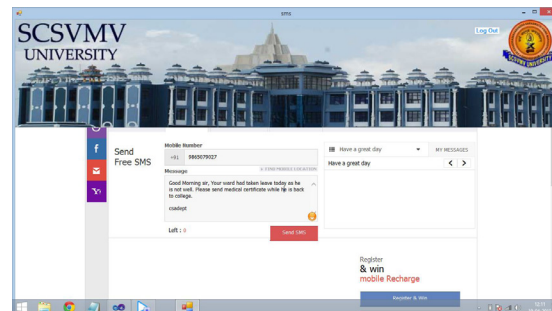


Figure 5. SMS form.

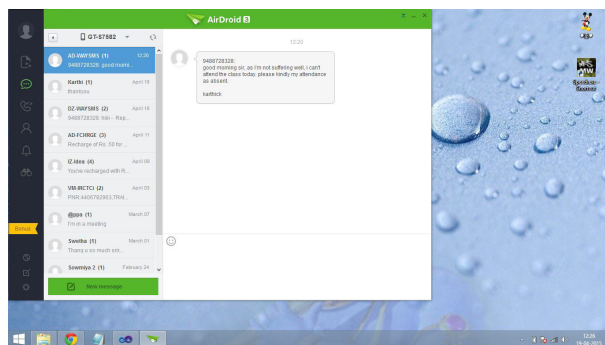


Figure 6. Airdroid form.

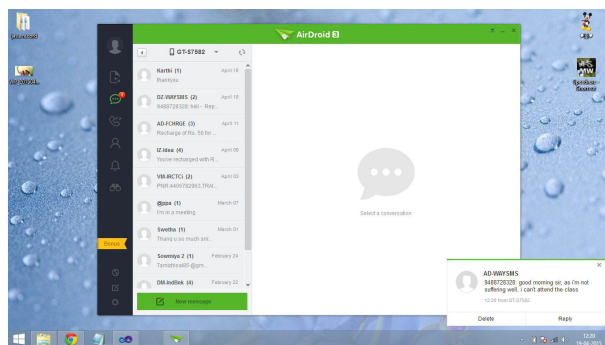


Figure 7. Incoming message form.



Figure 8. Admin login form.

Student Name	Register Name	Gender	Department	Course	Father/Student Name	Father/Student Mobile Number	Mobile Number
Aravindhan	11125017	Male	CSA	MCA (4)	Venkatesan	9449720238	9449807366
Arjun	11125020	Male	CSA	MCA (4)	Venkatesan	9605754538	888822855
Divya Lakshmi	11125016	Female	CSA	MCA (4)	P. Baburaj	7994951230	887679541
Harshitha	11125014	Male	CSA	MCA (4)	Shan	9607946436	960719827
Venkatesan	12545	Male	CSA	MCA (4)	Ravi	9449807366	9449720238
Jayalaxmi	11125012	Female	CSA	MCA (4)	Shan	4557891235	2138464343
Gayatri	11125027	Female	IT & Soft	IT & Soft	Praveen	9112412711	9421194585

Figure 9. Report form.

## 6. Conclusion

This work is to access the details about the student information and generate reports. The project “Mobile Based Attendance Maintenance System” is a collection of static and dynamic pages. This project offers user to enter the data through simple and interactive forms. This is very helpful for the students and staff members to keep and maintain the information about students easily. Further this work can be expanded to store the internal marks, semester marks and placement activities.

## 7. References

1. Student Attendance Through Mobile Devices. Available from: <http://ethesis.nitrkl.ac.in/5195/1/109CS0146.pdf>. Date Accessed: 11/05/2013.
2. Chawhan SS, Girhale MP, Mankar G. Mobile Phone Based Attendance System. IOSR Journal of Computer Engineering. 2013 Mar-Apr; 10(3):48–50.
3. Online Student Attendance Management System Project. Available from: <http://1000projects.org/online-student-attendance-management-system-project.html>. Date Accessed: 5/08/2012.
4. Jessenth Ebenezer P, Muralidharan MR, Srikanth S, Ramesh E, Prabhu S. Android Application for Student Activity Register. International Journal of Research in Engineering and Advanced Technology. 2014 Apr-May; 2(2):1–3.
5. Joshi R, Shete VV, Somani SB. Android Based Smart Learning and Attendance Management System. International Journal of Advanced Research in Computer and Communication Engineering. 2015 Jun; 4(6):256–60.
6. Sospeter J, Kajjage S. Requirement Analysis and Design of RFID and Mobile Application based Attendance Management System: A Case Study of Ordinary Level Schools. Communications on Applied Electronics (CAE). 2015 Aug; 2(6):17–22.
7. Akhila K, Prathyusha B, PavanKumar M, Amrutha M. A Novel Approach of Mobile Based Student Attendance Tracking System Using Android Application. International Journal of Engineering Research and Technology (IJERT). 2013 Apr; 2(4):2139–43.
8. Mahat SS, Mundhe SD. Proposed Framework: College Attendance Management System with Mobile Phone Detector. International Journal of Research in IT and Management. 2015; 5(11):72–82.
9. Patel UA, Swaminarayan Priya R. Development of a Student Attendance Management System using RFID and Face Recognition: A Review. International Journal of Advance Research in Computer Science and Management Studies. 2014 Aug; 2(8):109–19.
10. Avinaash Ram SP, Albert Mayan J. Mobile Attendance Management and Employee Registration. ARPN Journal of Engineering and Applied Sciences. 2015 May; 10(8):3727–30.
11. Mohammad SU, Allayear SM, Das NC, Talukder FA. A Location Based Time and Attendance System. International Journal of Computer Theory and Engineering. 2014 Feb; 6(1):36–8.