International Journal of Research Publication and Reviews

Attendance Monitoring System with SMS Alerts Using Mobile Application

Aditi Yuvraj Nigade, Samiksha Santosh Bansode , Vaishnavi Anil Borate , Vaishnavi Prashant Bhosale, Jyoti Thorat

Department of Computer Science, Sharadchandra Pawar Institute of Technology
Email: nigadeaditi2006@gmail.com, samikshabansode0810@gmail.com, vaishnaviborate37@gmail.com, vaishnavi.bhosale8282@gmail.com, Jjyotithorat09@gmail.com

ABSTRACT

An attendance monitoring system integrated with SMS alert functionality was deployed to automate attendance tracking and improve communication with parents. Amongst the regular duties that the teaching staff has registered students' attendance. One of the teaching staff tasks at higher education institutions is regularly registering students' attendance which can also be very time-consuming. As a result of this, develop a program which has the ability to access and visualize the data of students' attendance got from the group of classrooms. In most colleges, lecturers use the old system of attendance in which they take a sheet of paper with all the names and have students sign it for presence. With the ever-increasing number of students in the class, the difficulty of keeping accurate attendance records has also increased. Not only this, but also the student is the one who added his name to the list in charge of the attendance passing. An Android mobile application developed using Java to monitor the attendance system, monitoring students in a large university providing fresh perspectives on student attendance and room usage patterns by showing occupancy at various spatial, such as per-room and per-course, and temporal, such as over a day, week, or semester granularities. The system involves the prior intimacy to the student's guardian/parent where, in case student does not attend a certain lecture on the same day, information in the form of SMS will automatically be sent to the parents for their awareness.

Keywords: Attendance System, SMS Alerts, Mobile Application, Automated Attendance, Academic Monitoring.

1.INTRODUCTION

The Student Attendance Parent SMS Alerting is a mobile Application made to enable the attendance tracking for the college and to communicate efficiently between the teachers and parents. By means of attendance monitoring integration with SMS alerts, the system intends to strengthen parent-teacher liaison and advocate the need for parents to know their child's punctuality on time. This app provides not a complicated but a good and an effective way of automation of attendance management and increase of parental knowledge of student performance. The Student Attendance System is a very important tool for educational institutions to manage and track the attendance of students. Generally, attendance is marked using conventional methods like pen and paper technique which is not only time consuming but also exposed to human error. Mobile apps are a technology advancement that has become popular as they help individuals in numerous ways, for instance, this is the case with the attendance management. An Android-Student Attendance System is a quick, automatic as well as a convenient way for teachers, students, and parents to check attendance in the class.

The system based on the Android operating system is an easy, accurate and really fast way to check the attendance of the student that can be available to all the people in the class. Android supported apps are used to mark, keep, and manage student attendance on a real-time basis, which leads to saving of time, better accuracy, and an overall improvement in the school daily routine. Using the Android operating system brings multiple advantages and ease of use, apart from being it is accessible and can be used with other features such as alerts, reports and data analysis. The system is aimed primarily at providing a positive relationship with users assisting in the swift attendance marking by the teacher thus, connecting students with parents if need be through the presence data in the system.

2. SYSTEM ARCHITECTURE
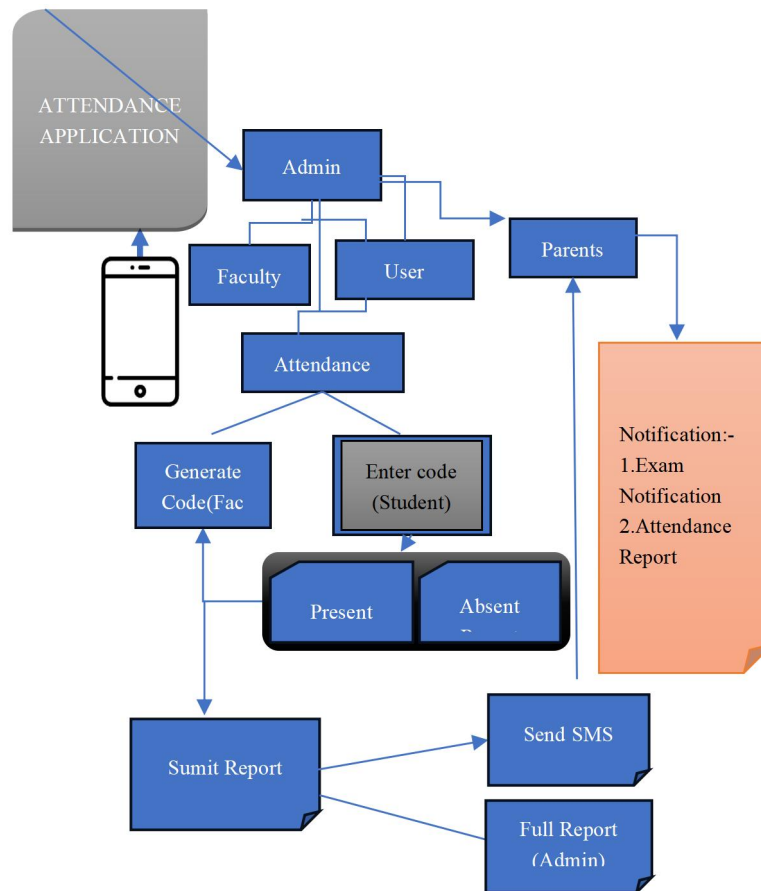
The proposed system architecture contains the subsequent components.

- Student Module: Where students report their own attendance, monitor their attendance record, and the exam schedules.

- Faculty Module: Which permits the marking of the attendance through the unique session codes and also creates the alerts for those who are absent.

- Parent Module: This one is able to use the app to get notifications as well as to access the attendance reports.

The system offers a platform that allows for an easy and convenient communication among the cited modules which ensures that attendance is tracked accurately and messages are well delivered.

3.PROPOSED METHODOLOGY

To solve the problems mentioned earlier, we adopted a combination of a mobile device .The participants in class can access the application on their devices themselves and to do so they will find text box to enter code on the device. The code will be provided by the faculty members, i.e., teachers. Faculty/Teacher will tell this code to students during attendance time. The first thing that the user should do is to verify that the screen is surely the registration screen for oneself. After obtaining the code, the user should submit it to the system. Then the attendance report is generated. Students who are marked absent will receive a text message. The guardians/parents will receive SMS in the form of text. This will take place if a student is absent.

4. IMPLEMENTATION

4.1 Technologies Used

- Frontend: Android-based mobile application(java).

- Backend: Firebase for secure data storage.

4.2 appropriate User Roles

- Student: Submit attendance, view alerts, and attendance reports.

- Faculty: Marks attendance, generates codes, and sends alerts.

- Parents: Receives notifications and views attendance reports.

5. RESULTS AND DISCUSSION

The proposed system has been extensively tried out in a college environment. The SMS alert feature has successfully dealt with poor parental involvement and absenteeism. Faculty members described the code-based attendance marking system as an easy and efficient method, and the parents were grateful for the   timely notifications.

Feature	Traditional Attendance	Existing Mobile Apps	Proposed System
Accuracy	Low (Prone to errors)	Moderate	High (Automated)
Time Efficiency	Time consuming	Moderate	Fast & Automated
Proxy Prevention	No	Partially Effective	Highly Effective
Parent Notification	No	Limited	Real-time Alerts

6. CONCLUSION

In almost every department, such as for example: education, work, or schools, attendance acts as one of the utmost important factors. It facilitates the tracking of a student, or workers' attendance, and absence by authorities. Teachers won't have any need to hold big files with them because the process can be done off with by attendance taking on a smartphone. They will not need to tear up spend their time on other responsibilities like organizing papers instead. They can concentrate on those important duties that will be on pupils' advantage. Using our project can be advantageous in a couple of ways, such as:

1. Instructors can do the job of taking attendance in a binary fashion, i.e. quickly and without errors and in a more effective way.

2. Less documentation will be needed by the system and it is also going to be faster and easier to keep attendance records online than on paper.

3. Teachers will find the app extremely attractive due to the user-friendly interface that it provides to end-users; it will be very easy to grab and run the application.

4. The process of collecting attendance will be very easy.

7.ACKNOWLEDGMENT

8.REFERENCES

[1] Somasundaram, V., Kannan. M, Sriram, V., 2016, "Mobile based Attendance Management System", Indian Journal of Science and Technology.

[2] Rakhi Joshi, Shete, V., Somani, S. B., 2015, "Android Based Smart Learning and Attendance Management System", International Journal of Advanced Research in Computer and Communication Engineering.

[3] Akhila, K., Prathyusha, B., PavanKumar, M., Amrutha, M., 2013, "A Novel Approach Of Mobile Based Student Attendance Tracking System Using Android Application", International Journal of Engineering Research & Technology (IJERT).

[1] C. Kovalik, C. Kuo, and A. Karpinski, "Assessing pre-service teachers' information and communication technologies knowledge," J. Technol. Teach. Educ., vol. 21, no. 2, pp. 179–202, 2013.

[2] N. Ganesan, "Rapid development of multimedia instructional modules for information technology education," J. Int. Technol. Inf. Manag., vol. 18, no. 1, p. 5, 2009.

[3] Y. Bassil, "A Simulation Model for the Waterfall Software Development Life Cycle," 2012. Accessed: Jan. 24, 2021. [Online]. Available: http://ietjournals.org/archive/2012/may_vol_2_no_5/255895133318216.pdf.

[4] M. A. Gerosa and C. Lucena, "The Development and Application of Distance Learning Courses on the Internet RDL-Reuse Representation View project An Agent-based Framework for the Internet of Things View project," Taylor Fr., vol. 17, no. 1, pp. 23–38, 2002, doi:10.1080/02680510120110157.

[5] C. Series, "Development of physics learning e-module based on local culture wisdom in Pontianak , West Kalimantan Development of physics learning e-module based on local culture wisdom in Pontianak , West Kalimantan," 2019, doi: 10.1088/1742-6596/1381/1/012045.

[6] T. Partovi and M. R. Razavi, "The effect of game-based learning on academic achievement motivation of elementary school students," Learn. Motiv., vol. 68, no. August, p. 101592, 2019, doi: 10.1016/j.lmot.2019.101592.

[7] A. Hussein and M. Hussain, "Social-media based assessment of academic programs," Stud. Educ. Eval., vol. 62, no. June, pp. 149–157, 2019, doi: 10.1016/j.stueduc.2019.06.003.

[8] A. Yahaya, M. L. Gooh, and H. Maalip, "Factors that Influence Students Performance in Academic, Discipline and Interest at Boarding School in Pahang," J. Psychol. Behav. Sci., vol. 2, no. 2, pp. 271–282, 2014.

[9] J. T. Chao, K. R. Parker, and A. Fontana, "Developing an Interactive Social Media Based Learning Environment," Issues Informing Sci. Inf. Technol., vol. 8, pp. 323–334, 2011, doi:10.28945/1421.

[10] V. Balakrishnan and C. L. Gan, "Students' learning styles and their effects on the use of social media technology for learning," Telemat. Informatics, vol. 33, no. 3, pp. 808–821, 2016, doi:10.1016/j.tele.2015.12.004.

[11] N. A. Ghani, S. Hamid, I. A. Targio Hashem, and E. Ahmed, "Social media big data analytics: A survey," Comput. Human Behav., vol. 101, pp. 417–428, 2019, doi:10.1016/j.chb.2018.08.039.

[12] M. H. Can, "An Investigation of Teacher's Use of Elearning in Science Olympiad in Russian Schools," Procedia - Soc. Behav. Sci., vol. 191, pp. 241–249, 2015, doi: