

## STUDENT ATTENDANCE APPLICATION

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**Abstract** - The Student Attendance Application is designed to efficiently manage and track students' attendance details. It generates attendance records based on their presence in class and maintains them on a daily basis. Staff members are provided with individual username and password credentials to update the student's attendance status. Each staff member is responsible for handling specific subjects and marking attendance for all students in their classes. It is maintained on the daily basis of their attendance. The staffs will be provided with the separate username password to make the student's status. The staffs handling the particular subjects responsible to make the attendance for all students. Only if the student present on that particular period, the attendance will be calculated and the absent student notification will be sent to their parents via pre-recorded message and voice call. The student's attendance reports based on weekly and monthly will be generated. It is a cross platform mobile application where teacher can mark attendance of student virtually and no need to carry attendance book every time to keep the record. This application takes multiple parameters into consideration. This application also has the functionality to generate the attendance sheets in excel format to the instructor. The students attendance reports based on weekly and consolidate will be generated. The application is aimed to save class time at no extra cost of purchasing any special peripheral devices.

**Keywords:** *Mobile application, Student attendance and mark management system, API,, Paperless Office, Attendance Management.*

### 1. INTRODUCTION

Smartphones are without a doubt the most important services fabrication of the 21<sup>st</sup> centennial. Mobile requests are what fashioned the smartphone very valuable. Skilled are many advantages of utilizing movable requests located in education outlook that maybe deliberate at this time. For example, manual records of scholars' attendance utilizing paper maybe time-consuming and susceptible to misfortune. More over, it delay for the university presidency to survive and process attendance records. Chant a mobile attendance whole it removes the troubles utilizing manual system. Now, junior attendance records merely academies/colleges/ schools use conventional designs to form the undergraduates sign the attendance all the while lectures. In most cases, the manual paper-located attendance arrangement demands many steps to a degree writing names on contract, enlist the attendance page, conditional the records in a file; and manual calculating the allotment of attendance per period/ temporal length of event or entity's existence /semester. Therefore, all

these steps demand reproduction records, period and human efforts in communicable attendance accompanying a scrupulous attendance tactics. This manual method needs expected naive all class each semester. Additionally, for abundant class sizes, this is very time consuming. Attendance Administration Plan is a software grown for everyday undergraduate attendance in schools, colleges and institutes. It simplifies to access the attendance facts of the scholar in the class. The information is combed for one drivers, which will be determined for one educator for the class. This system will likewise help in judging attendance fitness tests of a student.

### 2. LITERATURE REVIEW

The most important step in software development process This paper proposed an idea of recording attendance using biometrics (fingerprint) for tracking attendance and storing the data using LAN. This paper provides a brief description about the usage, accessibility, accuracy, affordability and acceptance of biometric (fingerprint verification) system. In this system the data is fetched from the individual in the form of fingerprint and then it is verified with the data that was stored in prior and marks the attendance of an individual. Finally the database is also obtained. This method provides high accuracy results and consumes less time but it is not cost-effective.[2] Web-based application developed for daily student attendance in departments within the university. It facilitates access to the attendance of a particular student in a particular class.[3] This system will also help in generating reports and evaluating the attendance eligibility of a student. The system is not only improving the work efficiency, students' study and development, but also can save human and material resources.

### 3. PROBLEM STATEMENT

This system developed will reduce the manual work and avoid redundant data. By maintaining the attendance manually, then efficient reports cannot be generated. The system can generate efficient weekly, consolidate report based on the attendance. As the attendances are maintained in registers it has been a tough task for to maintain for long time. Instead, the software can keep long and retrieve the information when needed. This

application is built for automating the processing of attendance. It also enhances the speed of performing attendance task easily. The Student Attendance will be based on the department and section. According to the department wise and section wise the attendance will be marked for the students.

#### 4. OBJECTIVES

The objectives of the system are

1. To defeat manual labor to excellent range.
2. To implement application established like a man for attendance administration structure.
3. To keeps path of daily attendance of graduate. Attendance page transfer.
4. To please pre-written textbook and voice call to missing to junior.
5. To test and certify the results

#### 5. PROPOSED SYSTEM

Our system Our company specializes in developing a highly intuitive and user-friendly Android application designed specifically for managing attendance. This application will be installed directly on users' Android smartphones, offering a convenient and accessible interface for teachers and administrators. The primary goal is to streamline the attendance process by minimizing the amount of information required from teachers and students.

The attendance app seamlessly integrates with a central database, ensuring that all attendance records are efficiently stored and easily accessible. This integration allows the control system, or automation system, to monitor and track the activities of both lecturers and students. By having a centralized system, administrators gain a comprehensive overview of attendance patterns, enabling them to make data-driven decisions and effectively manage classes. Teachers and administrators using the app will have a simplified experience, requiring only the essential details of the class and students to mark attendance. The application will offer a user-friendly interface, guiding users through the process and minimizing the time and effort needed to complete attendance tasks.

Moreover, our app will include additional features to enhance the overall attendance management experience. For instance, it can generate detailed reports and analytics, providing valuable insights into attendance trends, individual student performance, and class participation. These analytics can assist administrators in identifying potential issues and implementing appropriate interventions to improve attendance rates.

#### 6. SYSTEM ARCHITECTURE

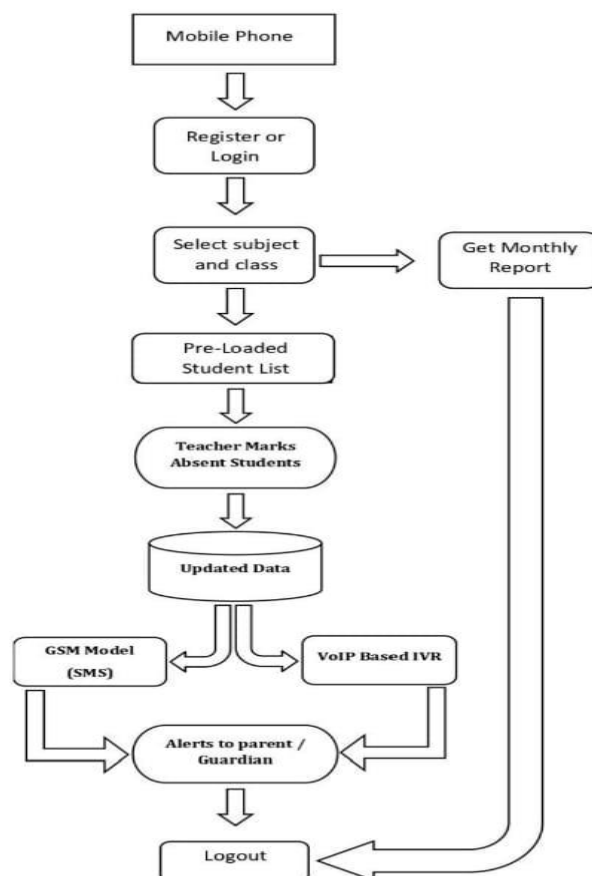
Following Fig.shows the general system architecture of the application wherein the the user and the admin interact with the device which fetches the data from the database. This project can play a vital role in providing solution for tasks of handling attendance that are critical to handle manually, by reducing efforts. The teacher to take attendance in the app and then the data is automatically synced with the school's database, then if the student is absent then respective parent will get message and pre-recorded voice call. The teacher can also get the monthly report of attendance sheet in desired format.

##### Register, Login and Logout

The Staff can open the app and tap on the "Register" button. Fill in their name, email, and password and details is updated in the database. After registering, to login in the mobile application, the teacher should enter their username and password and after taking attendance, the teacher should tap on the "Logout" button, to logout.

##### Details

This block contain the details of teacher i.e. their subject, timetable, etc. who can add student and its details like name, education, address, phone number. year of studying, department of studying, pass-out year, etc.



## Attendance

Once login in application staff can select their subject then department and then class of which they have to take attendance. Student list will appear with initially with green radio button, staff just have to tap on absent student and green button will turn red which means student is absent. After clicking on submit button the attendance will be submitted of that day. Teacher can also get monthly report in required format by clicking on get monthly report button.

## Global System for Mobile communication (GSM)

After taking attendance of students, when data is saved in database the app will configure the absent student list and using GSM the pre-recorded text SMS is send to their parents on their phone number which is already added in student details by using android device

## Interactive Voice Response (IVR)

An IVR system can also be used to make outbound calls. It can automatically dial the phone numbers and play a recorded message. List of absent student will be fetched from database and is used to tell the parents that their child is absent for particular lecture.

## 7. H/W & S/W REQUIREMENT

1. Hardware Requirements (Minimum)
  - Processor - Core i5 10th Gen./ Ryzen 5 5th Gen
  - RAM - 8 GB
  - Hard Disk - 20 GB
  - Graphics Card - 2 GB
2. Software Requirements
  - SQLITE Database
  - Programming Language: Java
  - Operating System: Windows 8 and above

## 8. IMPLEMENTATION

The paper describes the implementation details of the student attendance application using the Java programming language. It explains the utilization of data structures, such as HashMap, to store attendance records and student details efficiently. The paper highlights the usage of object-oriented programming principles to model the application's entities, such as the Student class. It also presents the integration of user input through the command-line interface and the utilization of file handling techniques to persist data to files. The attendance module is used to track student attendance, and view attendance history of months that is difficult to handle manually. Student list will appear with initially with green radio button, staff just have to tap on absent student and green button will turn red which means student is absent. After clicking on submit button the

attendance will be submitted of that day. Teacher can also get monthly report in required format by clicking on get monthly report button.

- Mark the attendance
- View the attendance
- Get monthly report

**Input :-** Student list of specific class

**Process:-** Mark attendance

**Output-** view marked attendance or monthly report

## Working

Teachers can mark the attendance by selecting the section they want to take attendance for. Teachers can also rectify the attendance of a student if it is marked incorrect by chance of any student. The marked attendance report can be taken of any month teacher wanted.

## 9. RESULT

Overall, the favorable implementation of the pupil attendance movable app can result in several benefits for schools and persons, containing improved attendance administration, raised parental engrossment, conservative with resources for teachers, infocompelled decision making, and convenient info transport. Here are few screenshots concerning this application.

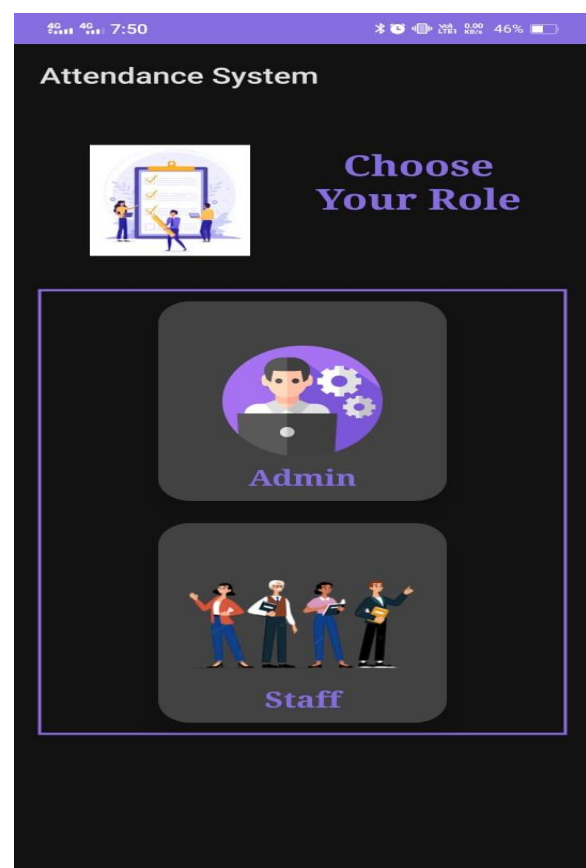


Fig 9.1. Home page

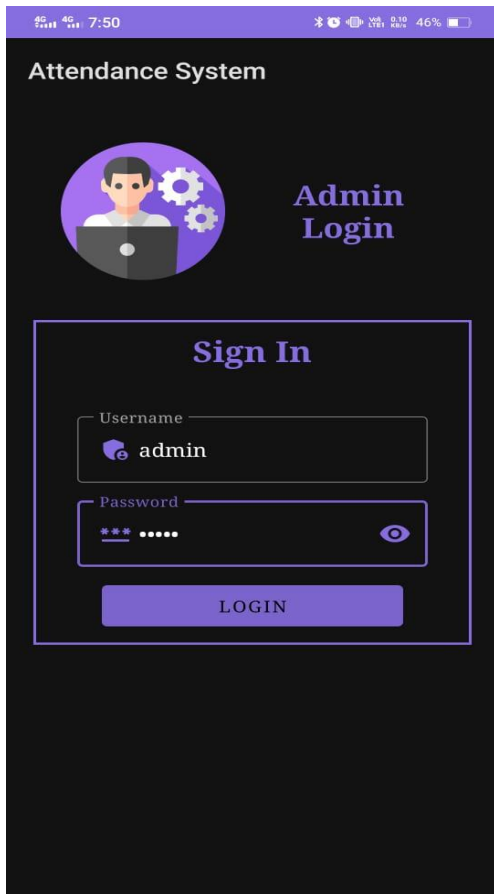


Fig 9.2 Login Page

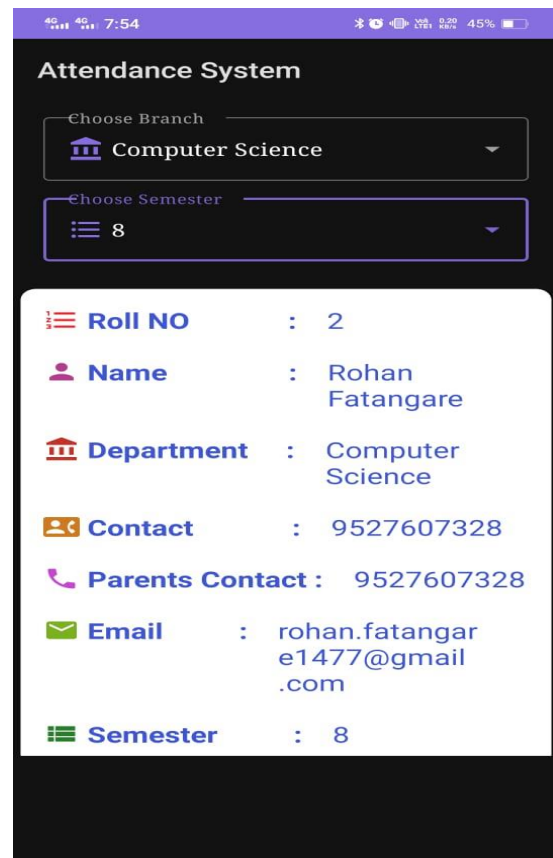


Fig 9.4 Student Details

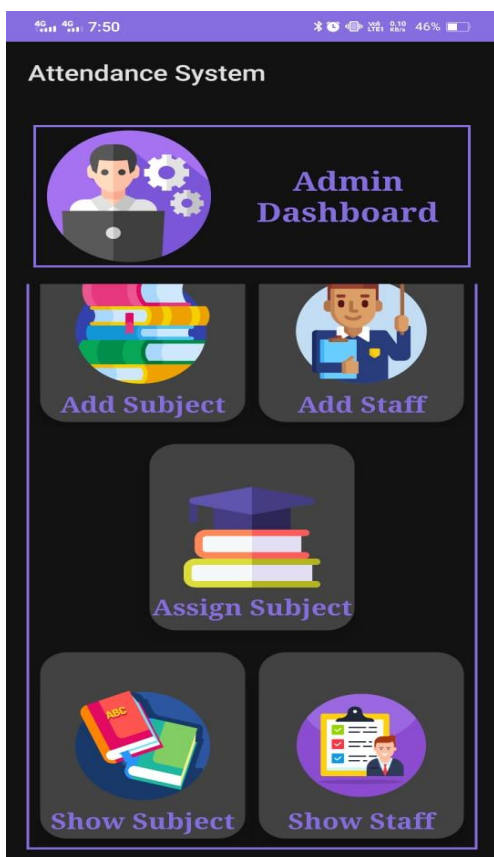


Fig 9.3 Admin Dashboard

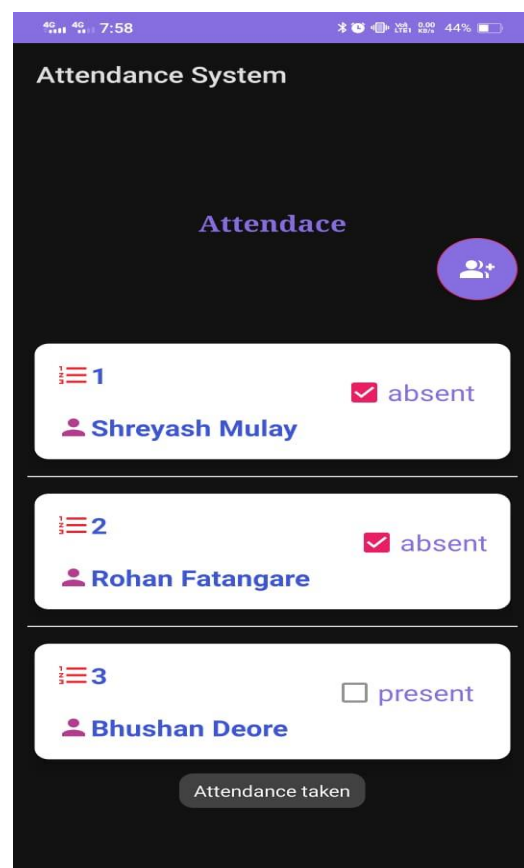


Fig 9.5 Attendance Details

## 10. APPLICATION AREAS

1. Colleges
2. Universities
3. Private Institutes and coaching center

Science, Engineering and Technology Research (IJSETR),

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## 11. CONCLUSION

This project has resulted in development of a cross-platform mobile application which helps instructors and students to quickly record attendance. It also helps to save faculty time by exporting the attendance to a well-known format (csv) digitally. This application mainly focuses on educational institutes use cases and can be further improved to support any type of institution where attendance is still manual.

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