

ANDROID APPLICATION BASED ATTENDANCE MANAGEMENT SYSTEM

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ABSTRACT:

The traditional method of managing attendance is a very difficult task. Faculty are required to keep attendance records in files and registers. This method has the drawback of using a lot of paper. Mobile phone attendance management offers an alternative approach in this direction. A mobile application called the Android Application-Based Attendance Management System (AABAMS) was created to simplify and automate the attendance management procedure in educational institutions. AABAMS offers a simple and effective solution for tracking attendance by utilising the capabilities of smartphones and the wide availability of Android devices. The application provides a number of modules, including reporting, data management, student registration, and attendance tracking. Administrators can create and update student records using the student registration module, which captures crucial data such as names, ID numbers, and pertinent contact information. This centralised database makes sure that student information is accurate and current, supporting efficient attendance management.

1. INTRODUCTION:

For educational institutions and organisations to ensure smooth operations and track student participation, efficient attendance management is essential. Accuracy, time-consuming procedures, and data administration are frequently issues with traditional paper-based attendance tracking systems. The Android Application-Based Attendance Management System (AABAMS) has developed as a cutting-edge solution to handle these problems. To simplify and automate the attendance management process, AABAMS makes use of Android technology and smartphones. AABAMS offers a practical and effective way to collect, manage, and analyse attendance data by offering a userfriendly interface. An overview of the significance of attendance management, the shortcomings of conventional systems, and how AABAMS resolves these issues are given in this introduction.

1. LITERATURE SURVEY:

1. Conventional Attendance Management Systems:

The literature discusses the conventional approaches to attendance management systems, emphasizing their role in schools, colleges, and institutions. It explores the features, functionalities, and benefits of traditional attendance management systems, including the ability to record, store, and retrieve attendance data for individual students. The challenges associated with conventional systems, such as data accuracy, realtime updates, and manual errors, are also examined.

2. Importance of Attendance Management Systems:

The literature highlights the significance of attendance management systems in educational institutions. It emphasizes the impact of accurate attendance tracking on student performance, engagement, and institutional efficiency. The relationship between attendance and academic outcomes, as well as the importance of attendance data for

decision-making and intervention strategies, are discussed.

3. Blockchain Technology in Attendance Management Systems:

The literature explores the emerging concept of using blockchain technology in attendance management systems. It examines the potential benefits and implications of integrating blockchain into the process of recording and verifying student attendance. The decentralized nature of blockchain, its transparency, security features, and the immutability of data are highlighted as key advantages for attendance management systems.

3. EXISTING SYSTEM:

Many academic institutions still manage attendance using manual procedures. Teachers must manually take attendance in classrooms using paper-based attendance sheets in order to accomplish this. Administrative personnel then gathers and processes these forms to compile attendance information. Manual procedures take a lot of time, are prone to mistakes, and might cause delays when collecting and analysing attendance data. The current systems frequently lack accessibility capabilities, making it difficult to access attendance data from a distance. Teachers and administrative personnel may have to physically access attendance records in the manual system, which restricts their capacity to quickly retrieve and analyse data. The current system's accuracy of attendance data is vulnerable to mistakes brought on by human entry or inconsistent data recording.

4. PROPOSED SYSTEM:

The proposed system involves the development of an Android application specifically designed for attendance management. The application will provide a user-friendly interface for teachers to record attendance using their smartphones or tablets.

This eliminates the need for manual attendance sheets and allows for real-time updates and accuracy. The proposed system automates the process of data entry by allowing teachers to quickly mark attendance for each student using the Android application. With the proposed system teachers, administrators, and parents, can access attendance information in real-time. This can be achieved through a mobile application. Users can view attendance record effortlessly. The proposed system incorporates measures to enhance data accuracy and security. By eliminating manual data entry, the system reduces the chances of errors in recording attendance.

5. ARCHITECTURE:

Client-Side (Android Application):

- User Interface: Develop an Android application that runs on smartphones or tablets and provides an intuitive user interface for attendance management.
- Bluetooth Integration: Utilize the Android Bluetooth API to communicate with Bluetooth-enabled devices.
- Attendance Tracking: Implement the logic for capturing attendance data using Bluetooth. This could involve detecting nearby Bluetooth devices (such as beacons or wearable devices) and associating them with specific users or locations.

Server-Side:

- Database: Set up a database to store attendance-related information such as user profiles, attendance records, and relevant metadata.
 - Web Services/API: Create a set of web services or APIs to handle communication between the client-side application and the server-side database. These services should support operations like user authentication, attendance data retrieval, and data submission.
- Bluetooth Devices:

- Beacons or Wearable Devices: Deploy Bluetooth-enabled beacons or wearable devices in the locations where attendance needs to be tracked. These devices should broadcast their presence and unique identifiers over Bluetooth,

- allowing the Android application to detect
- Android Application to Server: The Android application communicates with the server-side web services or APIs to authenticate users, retrieve attendance data, and submit attendance records.
- Android Application to Bluetooth Devices: The Android application scans for nearby Bluetooth devices, identifies the relevant ones (such as beacons or wearables), and associates them with users or locations.
- Bluetooth Devices to Android Application: The Bluetooth devices continuously broadcast their presence and unique identifiers. The Android application receives this information and matches it with user or location data

6. WORKING:

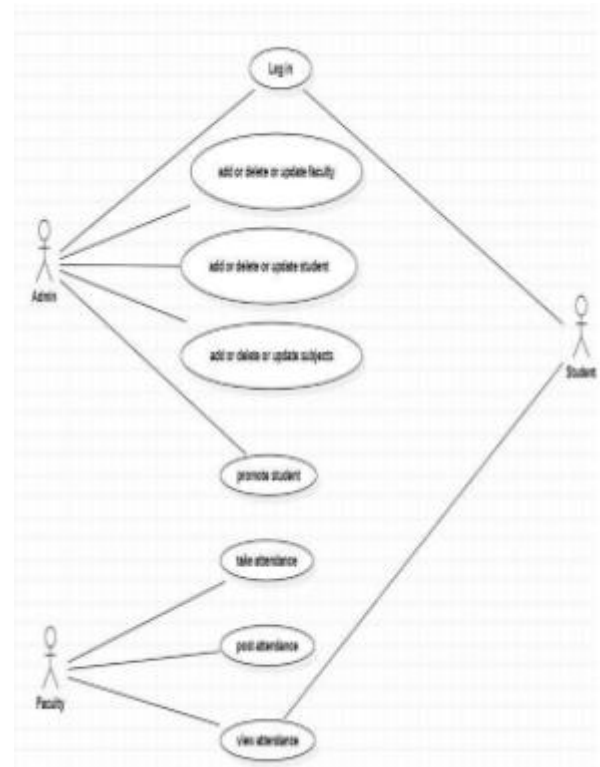
User Registration and Enrollment:

Users register and enroll in the attendance management system through the Android application. They provide their personal information and possibly a unique identifier. Users may also need to pair their smartphones with the Bluetooth devices (such as beacons or wearables) used for attendance tracking. Bluetooth Device Setup: Bluetooth devices (beacons or wearables) are placed in the locations where attendance needs to be tracked. Each Bluetooth device is assigned a unique identifier that distinguishes it from other devices.

Attendance Tracking:

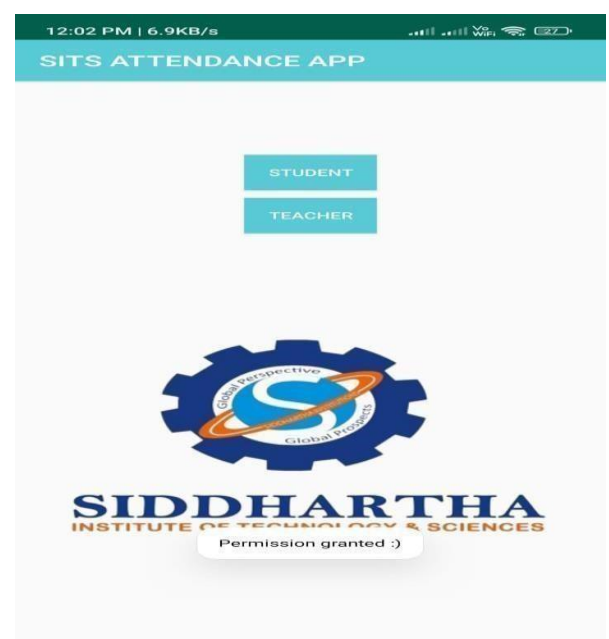
The Android application uses the BluetoothAPI to scan for nearby Bluetooth devices in the vicinity. When a Bluetooth device is detected, the application retrieves its unique identifier. Data Processing and Recording:

The Android application matches the detected Bluetooth device's unique identifier with the registered users or locations in the attendance management system. If a match is found, the application records the attendance for the corresponding user or location, along with the timestamp.



7. RESULT:

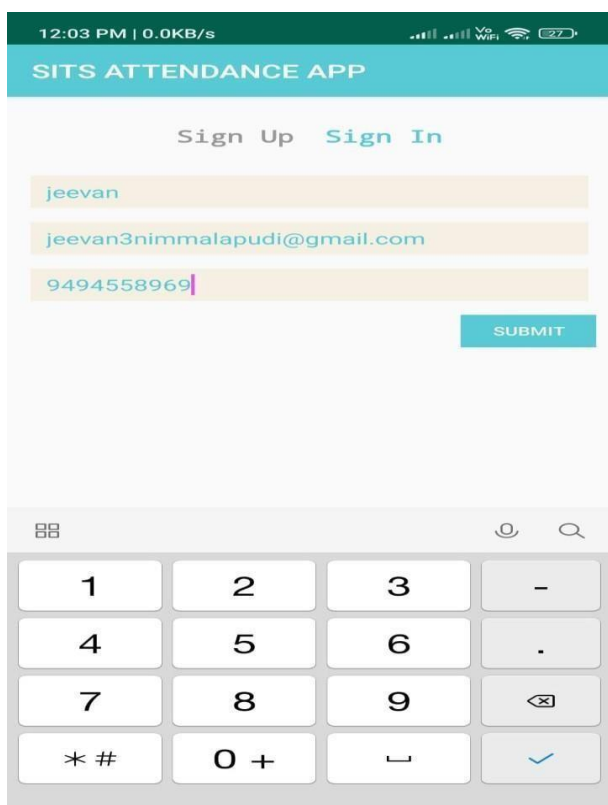
1. This is the main page of the application which we get after opening the application. It contains two interfaces known as teacher and student.



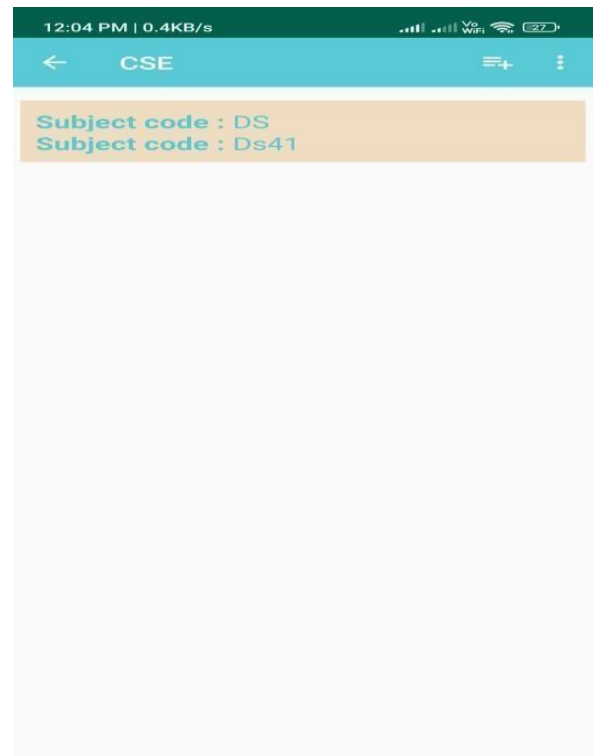
2. This is the teacher interface teacher should enter the passcode and enter into the teacher interface



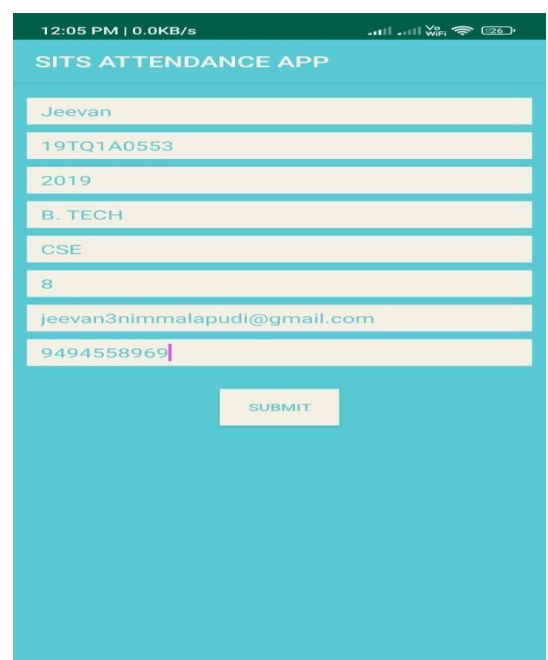
3. In this the teacher should signup and then sign using their name email and mobile number



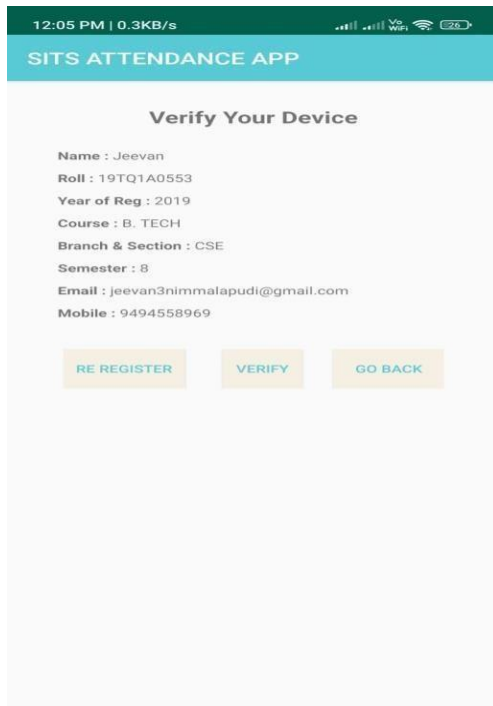
4. This is the teacher interface in which the teachers subject and subject code are available to take the attendance



5. This is the student interface in which the student registers using the student details



6. This is the student interface in which student can check their details and can give attendance



8. CONCLUSION:

In conclusion, an Android application-based attendance management system using Bluetooth offers a convenient and efficient way to track attendance. By leveraging Bluetooth technology, the system can accurately detect nearby Bluetooth devices, and associate them with registered users or locations. The Android Application Based Attendance Management System has provided a convenient method of attendance marking compared to traditional method of attendance system. In term of performance and efficiency it is very updated version of the existing traditional method. In addition, it is user friendly system as data manipulation cannot be done. And adaptive for implement in any educational system. This Attendance Management System offers a modern and efficient solution for educational institutions to streamline the process of attendance tracking, management, and analysis. By

leveraging an Android application-based approach, the system provides several advantages over traditional manual systems. The system offers enhanced efficiency by automating data entry and providing real-time updates. Teachers can easily mark attendance using their smartphones or tablets, eliminating the need for manual attendance sheets and reducing administrative burden. The system ensures data accuracy and reduces errors, resulting in reliable and consistent attendance records.

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