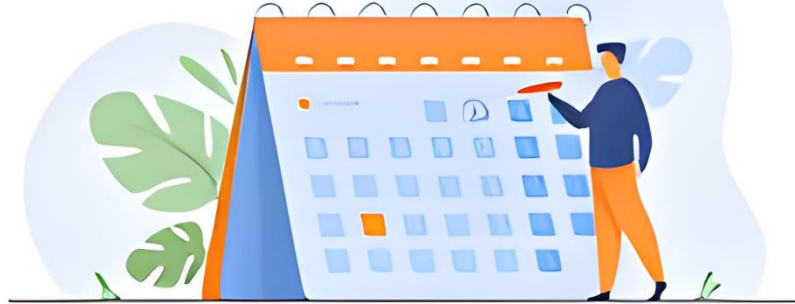# DIGITAL ATTENDANCE APP: Revolutionizing Attendance Management

Introduction

Welcome to the documentation for the Digital Attendance App! This application serves as a comprehensive tool for both professors and students to manage attendance digitally. Unlike conventional attendance apps, it offers a range of features tailored to meet the needs of educational institutions efficiently.
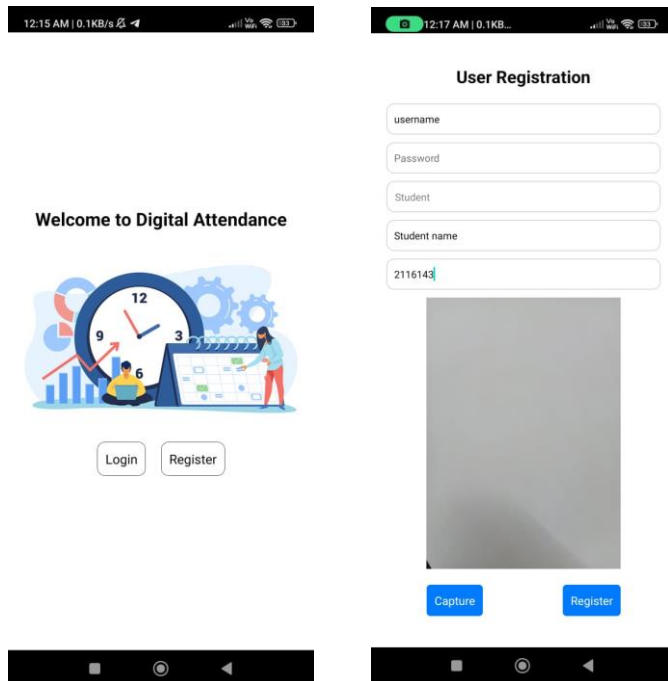
Key Problem Addressed

Attendance tracking in educational institutions has long been a tedious and error-prone process. Traditional methods such as manual roll calls are not only time-consuming but also prone to errors and manipulation. Students often have to wait in long queues to mark their attendance, leading to disruptions in the taking so much time. Many times even faculties having next classes have to wait in queue outside the class. Moreover, these methods rely heavily on the integrity of the students, as they can easily mark attendance for absent peers. This can lead to inaccuracies in attendance records, which can have repercussions on academic evaluations and administrative processes.

To address these challenges, our project focuses on developing a Facial Recognition Attendance System using Machine Learning. By leveraging the power of facial recognition technology, we aim to create a system that automates the attendance process, making it faster, more accurate, and less prone to errors. This system will not only streamline the attendance tracking process but also enhance the overall efficiency of educational institutions.
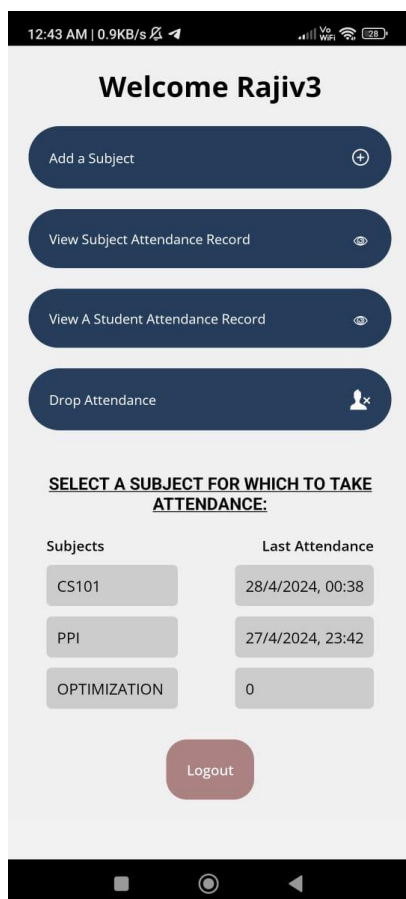
Professor's Interface

Registration

1. **Professor Registration:** Professors need to register first to access the app's features. During registration, they provide necessary information like name, email, and password.
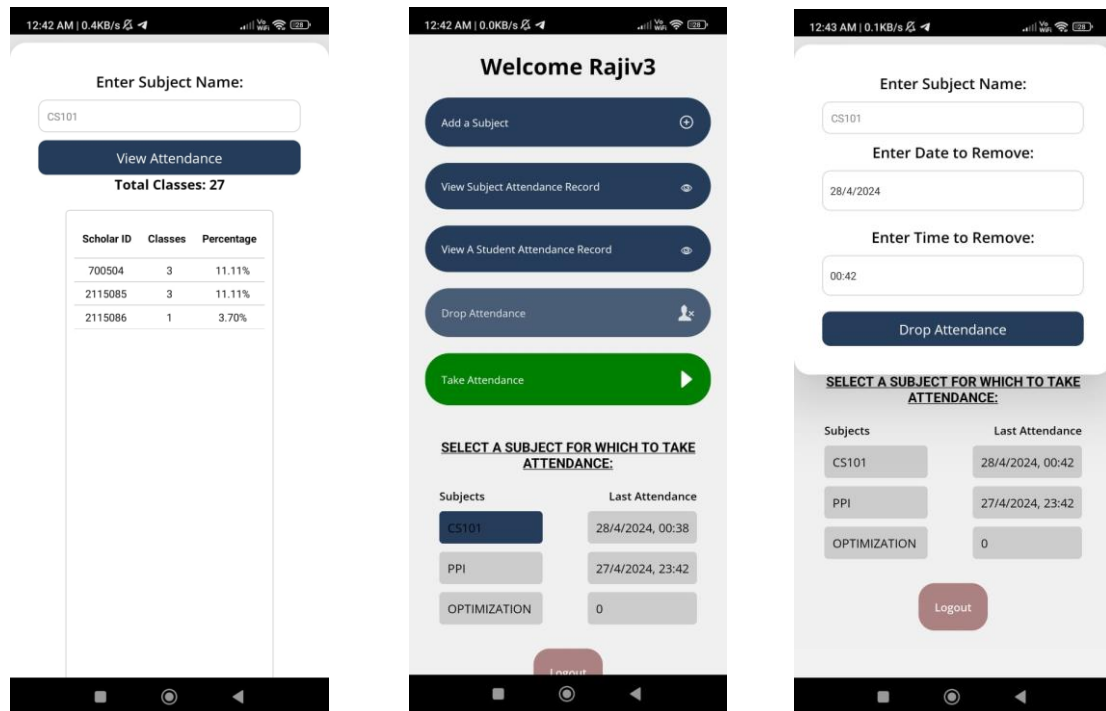

Subject Management

1. **Adding Subjects:** Once registered, professors can add subjects they are responsible for managing.

2. **Subject Overview:** The home page displays all subjects managed by the professor along with the date and time of the last attendance taken for each subject.

Attendance Management

1. **Taking Attendance:** Professors can initiate attendance for a specific subject by selecting it from the list and starting the attendance button.

2. **Attendance Monitoring:** Professors can monitor attendance in real-time and stop the attendance session when all students have marked their presence.

3. **Attendance Details:** Professors can view overall attendance details for a subject, as well as individual student attendance for a particular subject.

4. **Attendance Modification:** Professors have the option to drop attendance for a specific subject on a particular day if needed.

Student's Interface

Registration

1. **Student Registration:** Students must register before accessing the app. During registration, their live picture is captured for verification purposes.
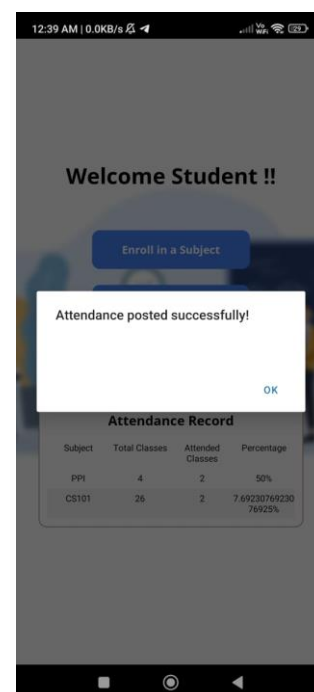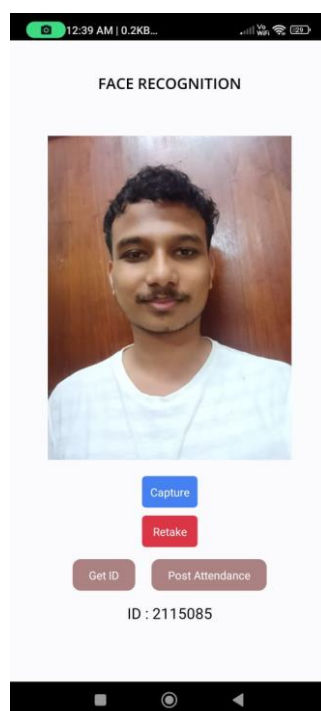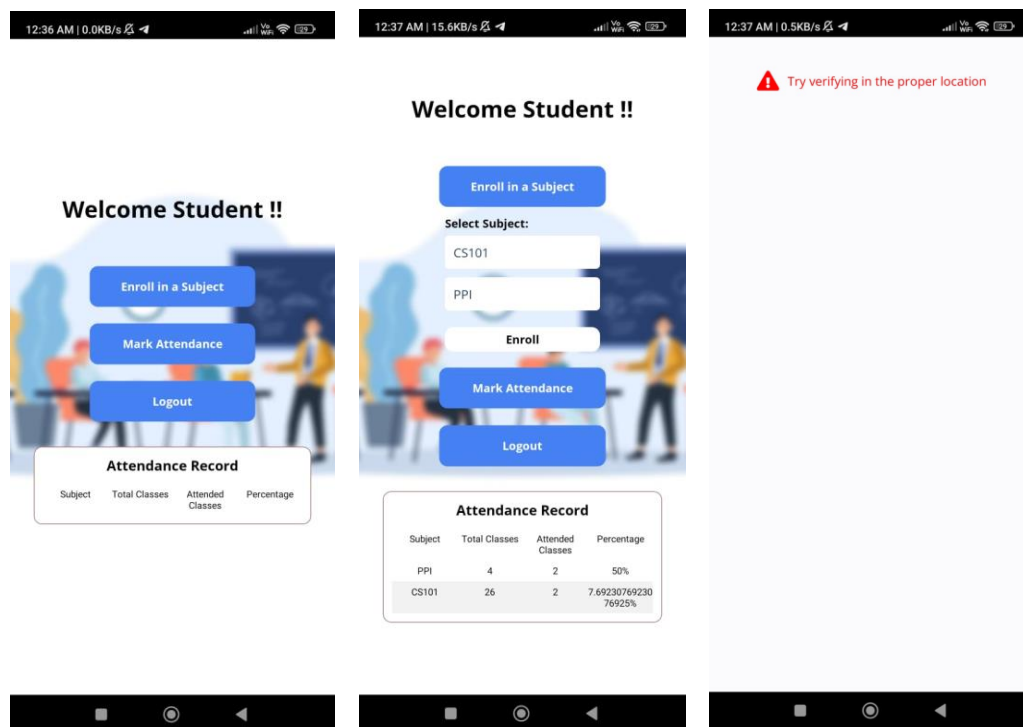
Enrollment

1. **Subject Enrollment:** After registration, students can enroll in subjects they are attending.

Attendance Marking

1. **Attendance Access:** Students can access the attendance marking section only when attendance for their enrolled subject is initiated.

2. **Location Proximity:** The app checks if the student's device is within the location proximity of the professor. If not, the student cannot mark attendance.
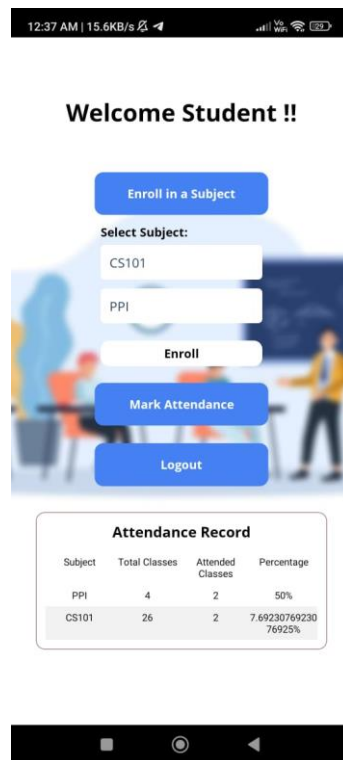
3. **Face Recognition:** Upon proximity confirmation, the app performs face recognition to ensure the student's identity.
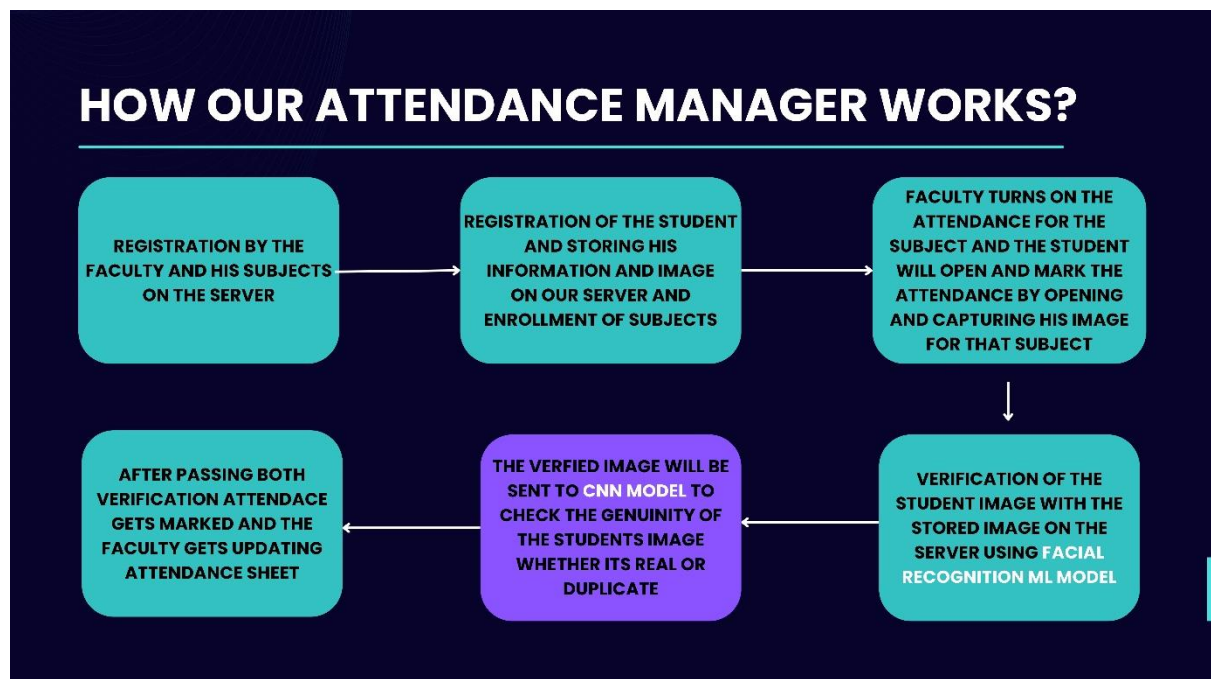

4. **Live Image Verification:** The system verifies if the image is live to prevent fraud.

5. **ScholarID Generation:** After successful verification, a unique ScholarID is generated for the student, enabling attendance marking.

6. **Single Attendance Submission:** To prevent duplicate attendance, students can mark attendance only once per session.

Attendance Records

1. **View Attendance Record:** Students can view their attendance records for enrolled subjects on their home page, providing transparency and accountability.

Working of the App

Conclusion

The Digital Attendance App provides a robust platform for efficient attendance management, catering to the needs of both professors and students alike. With features such as real-time attendance tracking, location proximity verification, and comprehensive attendance records, it streamlines the attendance process and enhances accountability in educational settings.

In a nutshell, our Facial Recognition Attendance System using Machine Learning is a game-changer for the attendance process in schools and colleges. It's like having a personal assistant for attendance tracking! By automating the process, we're making it faster, more accurate, and hassle-free. Students can simply walk in, smile at the camera, and attendance marked! This not only saves time but also ensures that attendance records are reliable.