Smart Attendance System Mobile Application Using Geofencing and Face Recognition

1. Introduction

Attendance management is an important part of educational institutions. Traditional methods are slow, less secure, and prone to errors. This project proposes a smart attendance system using geofencing and face recognition.

2. Problem Statement

Manual attendance systems are inefficient and allow proxy attendance. There is a need for a system that verifies both location and identity.

3. Aim

To develop a secure and automated attendance system using a mobile application with face recognition and geofencing.

4. Objectives

Develop mobile app using Flutter, use Firebase for database, implement face recognition with Raspberry Pi, apply geofencing, reduce proxy attendance.

5. Proposed Solution

The system verifies student location using geofencing and identity using face recognition before marking attendance.

6. Scope

Covers attendance management, scheduling, verification, and real-time updates. Limited to academic attendance only.

7. Methodology

Includes requirement analysis, design, development, integration, testing, and deployment.

8. Tools and Technologies

Flutter, Firebase, Raspberry Pi, Python, Camera Module, GPS.

9. Expected Outcomes

Improved accuracy, reduced fraud, real-time updates, and efficient attendance management.

10. Conclusion

The system provides a modern, secure, and efficient solution for attendance management.