

Project Title: *Integrated Biometric Attendance System with IoT Capabilities and Tamper-Proof Security*

Overview: I have successfully developed an advanced biometric attendance system designed to streamline attendance tracking for educational institutions. This innovative system combines robust hardware capabilities with sophisticated software features, ensuring accuracy, security, and user convenience.

Key Features:

Biometric Capacity: The system boasts an impressive capacity, supporting up to 1000 students simultaneously. This makes it suitable for deployment in larger educational settings.

Course Attendance Flexibility: The system is designed to handle attendance for up to 20 courses, with the flexibility to expand this capacity through simple code modifications.

Security Measures:

Secure Mode: A dedicated secure mode has been implemented to prevent unauthorized access and tampering, ensuring the integrity of attendance data.

Tamper-Proof Security: Robust measures have been incorporated to protect the system against tampering, providing an added layer of security.

Efficient Data Management: Attendance data is securely stored on an SD card, offering a reliable and accessible record of attendance information. The system allows for the convenient download of attendance sheets via HTTP requests, facilitating remote access to crucial data.

Portability and Design: The system features a custom 3D-printed housing, showcasing a blend of aesthetics and functionality. Integration of a rechargeable LiPo battery with a built-in charging adapter enhances portability, making it a versatile solution for various educational settings.

Bluetooth Integration: Seamless Bluetooth integration facilitates student enrollment and data management, providing a user-friendly and modern approach to system operation.

Conclusion: This integrated biometric attendance system represents a cutting-edge solution for educational institutions seeking a reliable, secure, and efficient method of tracking student attendance. Its blend of technical innovation, accuracy, and user-friendly design positions it as a valuable asset for modern educational environments.