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## IoT Biometric Fingerprint Attendance System using ESP8266

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Abstract: IoT-based biometric fingerprint attendance system, employing the ESP8266 microcontroller for seamless integration and data transmission. The system offers a secure, accurate, and efficient approach to attendance tracking, improving upon traditional methods in various applications. This paper explores the system's architecture, hardware and software components, advantages, and potential implications across diverse domains. This synopsis presents an innovative Attendance Management System that integrates IoT technology, biometric fingerprint authentication, and GSM module for realtime attendance tracking and notifications. The system utilizes a Nodemcu 12c OLED Display, Fingerprint Sensor, Breadboard, and GSM module, and is powered by the ESP8266 microcontroller. The system provides accurate and reliable attendance tracking, eliminates buddy punching and proxy attendance, and sends instant SMS alerts to parents/guardians or administrators. The system is scalable, cost-effective, and suitable for various institutions, including educational institutions, corporate and industrial settings, healthcare and medical institutions, and government and public sector institutions

**Keywords**: Biometric Authentication, Fingerprint Sensor (R307), IoT, NodeMCU ESP8266, GSM Module, Attendance System, Microcontroller



