ABSTRACT

A secure digital locker system integrating biometric authentication and IoT monitoring is proposed to enhance storage security and access control. Built using an Arduino microcontroller and the R307 fingerprint sensor module, the system is designed to manage access to two individual lockers with a single authorized fingerprint. Upon successful fingerprint verification, a specific locker assigned to the user is activated and unlocked, ensuring high security without the need for traditional keys or password-based access. In addition to biometric authentication, the system incorporates IoT functionality that enables remote monitoring of locker access events. The real-time status of the lockers whether locked, unlocked, or accessed is displayed on an IoT dashboard, providing transparency and improving security oversight for both users and administrators. Alerts for unauthorized access attempts or system malfunctions can also be configured, enhancing situational awareness and allowing immediate responses. This system is particularly suited for environments such as schools, offices, hostels, gyms, or libraries, where secure, user-specific storage is essential to protect personal belongings or sensitive materials.