

## **ABSTRACT**

*Storage lockers often used in public facilities to store valuable personal items should be monitored and guarded against break-ins. A preventive action that can be taken is to build a smart locker box equipped with a security system using a magnetic reed switch sensor, fingerprint sensor, servo motor, 16X2 LCD with I2C, and a buzzer controlled by a Wemos D1 R2 ESP8266 microcontroller based on the Internet of Things using the Telegram application. The security system in the smart locker is divided into two protections, namely physical door security monitoring with a reed switch sensor and biometric access rights for tenants with a fingerprint sensor. In this study, the results showed that in the physical door security protection, when the locker door is detected to be forced open beyond the 1 cm distance tolerance limit, it will cause the buzzer to sound and an emergency security message to be sent to the Telegram bot that the locker has been broken into, with an average message delivery response time ranging from 2.15 to 2.60 s. In the biometric access rights protection, when a fingerprint is recognized by the system with an average processing time of 0.39 s, it will move the servo motor to an angle of 0° so that the smart locker can be opened, the LCD displays information, the buzzer sounds, and a security message is sent to the Telegram bot that the locker access is successful. The response time obtained depends heavily on the stability level of the WiFi internet network connection being used.*

**Keywords:** *smart locker, security system, biometric, IoT*