

ABSTRACT

Crime is an anti-social act that violates the law, is related to seizing other people's property rights and can cause a loss, inconvenience, and inappropriateness in society (Soerjono in Saraswati, 1999). Security is something that needs to be considered to create a sense of comfort when at home or when homeowners leave the house to work or travel.

In this Final Project, the use of the Internet of Things (IoT) is made using a fingerprint, buzzer, solenoid and also an application made with Android Studio which is connected to NodeMCU V3 ESP8266 and ESP32-CAM which is connected to a pir sensor and camera. Then, NodeMCU V3 ESP8266 and ESP-32 CAM are connected with firebase as real-time database. The system is successful if the fingerprint data is correct so that the door opens. The database will be adapted to the android application. And when the system detects incorrect fingerprint data, a notification will be sent to the android application and the owner is able to use the camera as monitoring.

From the test results that the Fingerprint sensor can be used, the PIR sensor can detect motion objects. In the application, the open and lock features can be used, the notification feature can be used, and the camera feature can also be used. In testing the throughput (fingerprint) to the database is 389.793 bps and the delay is 0.46 s, the firebase throughput (fingerprint) to the application is 51.59 bps and the delay is 3.02 s, the PIR & Camera throughput to firebase is 537.41 bps and the delay is 0.19 s, the firebase throughput (PIR) to the application is 18.87 bps and the delay is 8.45 s, and the firebase throughput (camera) to the application is 2337.11 bps and the delay is 0.15 s.

Keywords: Internet Of Things, Solenoid, Fingerprint, Android Studio, NodeMCU V3 ESP8266, ESP-32 CAM, PIR Sensor, camera, Buzzer, relay.