ABSTRACT

Based on data from BPS (Central Bureau of Statistics) and the National Police until 2023, the high number of theft cases shows the importance of improving home security. Often this problem occurs due to negligence in locking doors and the habit of travelling frequently. With Internet of Things (IoT) technology, a prototype of an automatic security system on the door of a house can be an effective solution. This prototype uses RFID (Radio Frequency Identification) integrated with an Arduino Uno microcontroller as a data processing centre, and a Telegram Bot connected to the NodeMCU ESP32. Telegram bot functions to give commands and receive notifications of door conditions. The door lock solenoid can work when the 12V voltage is met this condition is called Normally Close (NC) meaning that when an electric current is applied to the solenoid it will pull the locking mechanism, and the door will not be locked (unlocked). Normally Open (NO) condition means that the solenoid contacts are in an open state (not connected) when no electric current flows through the solenoid coil. After testing the Quality of Service in the form of latency and reliability, no errors were found, so it can be concluded that the system works 100% well, which means that the system programming with hardware can run according to its function.

Keywords: *Arduino Uno, Automatic Door, ESP32, Internet of Things, Telegram Bot*