

ABSTRACT

Home security is an important factor in the community environment. According to data from the Statistics Indonesia, the level of criminality in Indonesia is quite high. The rise of criminal cases such as burglary and house robbery is categorized as a high rate events crime. Therefore, an effective security system is needed that can be controlled and monitored by the house owner when they are not at home so that the home owner always feels safe and secure.

In this research the authors designed a smart alarm system to monitor the situation around the door of the house and can be monitored by the house owner. The smart alarm system designed by the author is based on Internet of Things (IoT), so that the conditions around the door of the house can be monitored in real time via a website. In this system, the author uses Arduino Mega as a microcontroller and it has been connected to an ultrasonic sensor and several sensor modules. The function of Arduino Mega itself is to send data that has been retrieved by the ultrasonic sensor and sent via the API (Application Programming Interface) to be forwarded to the database. Arduino Mega also has the function of reading data in the API.

From the results of the tests that have been done, it is known that the system can work properly. In addition, Quality of Service testing was also carried out, in sending data from the device to the API, an average delay of 0.2998s was obtained, while for the average delay of reading data from the API to the device was 0.3431s and the average throughput of reading data from the device to the API is 44474.43bps while the average throughput for reading data from the API to the device is 3293.81bps.

Key Words: *Arduino Mega, Smart Alarm, Internet of Things*