

## IDENTITAS DOSEN PENGUSUL REWARD

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## IOT-BASED FIRE AND THEFT DETECTION SYSTEM IN HOUSING

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**ABSTRACT.** *The Internet of Things (IoT) system has become an object of research that is proliferating lately in various fields of life. Along with that, the concept of smart city is also promoted in many cities in the world. One part of the idea of smart city is the safety of the environment and society. Hence, this research will apply a home security system in the form of early detection of fire and theft in residential areas to create a prosperous and safe city. This research, manages two systems, namely the user side by installing several sensors such as smoke and temperature sensors, which detect fires, and PIR sensor and ultrasonic sensor, to detect theft. On the server-side, there is a Web-based monitoring system that can be used by security officials to monitor security conditions and the user himself when leaving home. Both of these systems communicate with each other with wireless networks. The result indicates that the system can work well. This system is built by integrating several sensors as input, Arduino Uno as data processing, Xbee for sending data to the server, and Ethernet shield for sending data to the Internet. Furthermore, monitoring results will be displayed on the website. Thus, the concept of smart city with the application of IoT for public safety can be applied in a housing to detect fires and theft.*

**Keywords:** Internet of Things (IoT), Fires, Theft, Sensors, Arduino Uno, Xbee, Ethernet shield, Website