Intrusion Detection System for Smart Home Security

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Abstract: *The main problem in this research is the increasing prevalence of theft and burglary cases. This incident was caused by the busyness of every person in his daily life so that he forgot the security of his house. The IoT-based home security system that utilizes the Ultrasonic sensor as a human motion detector and then sends a notification in the form of notification via SMS or e-mail is one solution to overcome the problem that was previously proposed in previous research. However, to further clarify the warnings sent from the system, a home security system is needed that can attach images in the notification. In this study developed an IoT-based home security system. The IoT security system developed, can automatically send email alerts by attaching images when the Ultrasonic sensor detects human presence. The IoT system requires a Arduino UNO as a microcontroller that has been connected to the internet, a Ultrasonic sensor to detect human movement. Experiments in the study show that the IoT system can automatically send email alerts by attaching images when Ultrasonic sensors detect human presence in various light conditions with a range of 0-5 meters and the speed of sending email alerts affected by conditions of internet network connections and files size of image sent.*
This project uses regulated 5V, 500mA power supply. Unregulated 12V DC is used for relay. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

Keywords: IoT, Ultrasonic Sensor, Arduino UNO, Wi-Fi Module, LCD, Servo Motor

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123

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