

## **ABSTRACT**

Internet of Things is currently growing rapidly, making people want to be creative and encouraging people to do something new that can be applied and can be used easily and practically. It is well known that in everyday life there are places like mansions, potential targets for criminal activities. Because this crime usually occurs when the occupants of the house are not at home or outside, this research uses a microcontroller-based PIR (Passive Infrared) sensor to notify crime information through the TELEGRAM application. Based on the problems that have been raised, the proposal in this research hypothesizes at the stage of crime prevention, especially objectivity in the home security system. The purpose of this research is to create a notification development system and display the information through the TELEGRAM application, so that this system is able to increase security at home based on Arduino. So, this home security system monitors the status of body temperature sensors installed at important points in the house. When the PIR sensor detects a moving object with body temperature on living things so that the sensor is placed at a height of 100 cm from the earth's surface to detect it like a human it will provide a notification to TELEGRAM, BOT Father is one of the functions facilitated by the Telegram API and is used as a detector if there is a movement of objects from the temperature of the human body at home. Next, the information is sent and produces output to the phone using the Android operating system. In this study, a home security system was built using Arduino Mega 2560 as a microcontroller with 3 PIR sensors as a human body heat temperature sensor, and ESP01 was used as a Wi-Fi module to connect to the internet which would send notifications to Telegram. In this research, a simulation has been carried out by bringing the hand closer to the PIR sensor so that the PIR sensor detects the temperature of the human body and sends a notification "Object detected in living room, kitchen, family room" to telegram. When testing the simulation using hands, it is kept away from the PIR sensor, the PIR sensor does not detect the presence of human body heat, so the system sends a notification "Object not detected in living room, kitchen, family room" to telegram.

*Keywords : Arduino Mega 2560, ESP01, PIR Sensor.*