OPTIMIZATION OF IOT-BASED FIRE DETECTION SYSTEM WITH NODE-RED INTERFACE AND TELEGRAM NOTIFICATION

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ABSTRACT

Fire is a common disaster that causes significant losses, including environmental damage and even loss of life. Fires can be caused by various factors, including human negligence and natural causes. Therefore, an effective solution for detecting sparks is needed. The purpose of this research is to implement an Internet of Things (IoT)-based fire detection system using the MQTT protocol with a Node-Red interface and Telegram notifications. This fire detection system uses an ESP8266 microcontroller, a flame sensor to detect fire, and a buzzer as an actuator that sounds when the sensor detects fire. This system will be able to detect the presence of fire and provide warnings via a buzzer alarm and Telegram notifications for rapid response and effective prevention.

Keywords*: Fire, Internet of Things, MQTT, Telegram*