ABSTRACT

The rapid development of technology brings significant benefits to human life. However, it also presents new challenges in terms of safety, especially regarding the use of electrical currents. The presence of various advanced electronic devices such as laptops and smartphones increase the demand for electrical power. The widespread use of these devices often requires multiple devices to be used in one place, increasing the risk of electrical short circuits.

In this Final Project, the automation of a light fire extinguisher device based on IoT using ESP32 is implemented. In previous research, fire prevention was addressed using an IoT-based system with Arduino. In this system design, a different microcontroller, namely ESP32, will be used. The goal of this Final Project is to address fires that may occur in areas with a high risk of fire.

The The results of the automation of this tool are expected to be able to detect fires using the parameters of fire distance and smoke thickness. This system can be installed in rooms that have a risk of fire, such as cardboard warehouses or chemical warehouses and can send notification messages in real-time. The sensor detects fire with a flame sensor which can read small fires during daytime testing at a distance of 0 cm to 60 cm, testing using matches during the day and can read large fires during daytime testing at a distance of 0 cm to 4 meters using paper. which is covered in gasoline, as well as testing the flame sensor at night can increase the sensitivity of the flame readings to fire. The reading level of the mq2 sensor to smoke is very responsive depending on the thickness of the smoke produced.

This automation can be used in rooms measuring 2.5 meters X 3 meters which is simulated as a burning room and can be extinguished by tools easily and without human help..

Keywords: Automation, Fire Extinguisher, Internet of Things, Fire.