ABSTRACT

In the era of technological developments today, many people have used fire detection systems in every house, but what people usually use is only a sound alarm. The system can only be heard by the homeowner if they are at home, but if they are not at home then the system cannot be heard. This also greatly minimizes the occurrence of pre-fire countermeasures.

Therefore in this study the system that is to be built is in the form of a fire detector, as for the work process of the system made by the author, DHT11 and MQ2 sensors detect signs of fire, then the detected data from these sensors will be entered into the raspberry pi 3 then the data will be processed with fuzzy logic method. Then the data that has been processed will be sent via whatsapp notifications to the user with the available network (Wi-Fi), besides the results of the processed data entered into web monitoring. The method used is the fuzzy logic algorithm, where the determination of fire conditions in this method is divided into several conditions and levels up to conditions that can be categorized as fire.

The system created in this study aims to prevent or minimize losses from fires so that they can be known and addressed early. With the use of fuzzy logic in this system can divide the conditions on the system parameters used, among others, temperature, with cold, normal, and hot conditions. In addition there are gases with thin, medium, and thick conditions. In addition, the network parameters used are throughput, delay, and packet loss. Through the DHT and MQ2 sensors as input and the results of the fuzzy system in the form of notifications sent via the whatsapp application and monitoring via a web monitor. The results obtained in this study are "dangerous" notification sent when the temperature parameters read the input values are in the heat and gas conditions in thick conditions.

***Keywords**:* Fire, Raspberry pi 3, Fuzzy Logic Algorithm, Whatsapp Notification.