

ABSTRACT

Fires can be caused by gas leaks in the kitchen sometimes unnoticed, when the kitchen is left it may not or forget to check the stove, besides that it can also be a subtle leak from the gas hose. In addition, negligence when cooking which often leaves the kitchen with the stove on, makes the potential for fire to occur. Therefore, the purpose of this study is to make a tool that can prevent fire. DHT11 sensors and MQ2 sensors are used to obtain data in the form of room temperature and gas concentration in the kitchen and test ESP32 QoS based on throughput, delay, and packet loss parameters. The results of this test obtained the calibration results of each sensor have an average error value, on the DHT11 sensor the error value is 0.62% while on the MQ-2 sensor the error value is 1.09% on sensor 1 and 2.24% on sensor 2. The results of temperature testing in the kitchen with 3 conditions have an average value, in conditions of no activity valued at 30.35oC, cooking conditions valued at 33.21oC, cooking conditions to burnt valued at 33.93oC. The results of testing LPG gas leaking in the kitchen in 3 conditions have an average value, in clean air conditions valued at 1.79 ppm on sensor 1 and 2.33 ppm on sensor 2, leaking gas conditions in closed spaces valued at 246.97 ppm on sensor 1 and 66.73 ppm on sensor 2, and leaking gas conditions in open spaces valued at 299.2 ppm on sensor 1 and 96.07 ppm on sensor 2. QoS results on the system obtained a throughput value of 2.92 kbps, packet loss 0.5%, delay 173.8 ms which shows that the quality of the network used is in the good category.

Keywords : LPG, ESP32, Internet of Things, DHT11, MQ2.