ABSTRACT

LPG leakage is a very serious problem and should be watched out for, in Indonesia LPG has become the main fuel used in households. Therefore, anticipation caused by gas leaks must be done, one of which is by utilizing Internet of Things technology. The use of the Internet of Things is currently a common thing in this day and age and is one proof of the development of technology so that it can be utilized to facilitate a job. Therefore, the Internet of Things is also utilized in security to prevent fire disasters due to LPG leaks that often occur in the community. In monitoring gas leaks and detecting the effects of LPG gas leaks, a tool is designed to detect LPG leaks using NodeMCU ESP32, MQ-5 gas sensor, LM393 fire sensor, Micro motor SG90, LoRa which uses a built-in or spiral antenna with a signal capture distance of around 100 meters as connectivity and the Telegram application as a medium for sending information. The method of conducting research is the use of experimental methods and getting the results of comparing the response time of the MQ-5 sensor and the LM393 sensor in small and large rooms. MQ-5 sensor testing gets an average response time of 19.46 seconds in small rooms and 20.10 seconds in large rooms and the average time difference between small and large rooms is 0.64 seconds. While testing the LM393 sensor gets an average response time of 3.93 seconds in a small room and 4.15 seconds in a large room and 0.21 seconds for the average value of the difference in response time between small and large rooms.

Keywords: *Internet of Things, LPG Leak, Security*