ABSTRACT

The purpose of this study is to develop an Android application using Arduino Nodemcu and MQ-2 Sensors to control lights and utilize gas leaks. Home is one of the basic needs for humans. The problem raised in this study is how to overcome the waste of electricity due to inefficient light control by the user. In addition, it also maintains the security of the house from the dangers of fire caused by gas leaks. The waterfall method is used in this study to develop the system. Flowcharts, use case diagrams, activity diagrams, and sequence diagrams are used to design this sytem. The results of this study obtained were to utilize Arduino NodeMCU and MQ-2 Sensors to be used as light control systems and gas leak detectors, then coding with the C programming language and the inventor app was needed to create an android application for light control and gas leak sensor detector supported with wi-fi. The success rate of this system is 95% with 15 trials.

Keywords: Arduino NodeMCU ESP8266, Sensor MQ-2, Light Control, Gas Leaks, Android