ABSTRACT

Until now, fires disaster problem still occurs frequently in residential area, fires are usually caused by negligence of the human itself as well as the poor quality of the electronic tools that being used which can trigger a fire. Delays in handling these fires can cause greater losses because the fire would spread to several locations around the house.

To overcome these problems, a fire detection system is required to notify and send the information directly to firehouse if there's a fires . In this final project, author created a prototype of fire detection system by utilizing a microcontroller and a mini PC Raspberry pi with LM35 temperature sensors and MQ135 smoke sensors. Fire detector is programed by using fuzzy logic sytem. When the presence of fires is detected by fire detector , data of the place will be send directly to the web server of firehouse information system. The data included coordinate, photo, temperature, smoke intensity and posibility of fires in the location.

Based on test results are obtained, fuzzy logic successfully implemented on a fire detection system which has the result , 100% match between the program and manual calculations, fire detector can insert data into database server and triger an alarm if indicated the existence of a fire, detection process takes 25,98 seconds.

Keyword : Microcontroller , fire detector , fuzzy logic.