

## ABSTRACT

In general, every household has the potential to have a fire incident. The fire incident can be caused by many factors. Thus, a fire detection device is needed as an effective preventive tool.

Webcam is an appropriate tool to become a fire detection device. The simple and ergonomic shape makes the webcam flexible to be mounted anywhere according to the need at hand. This final assignment will build a fire detection system based on webcam with digital image processing. The system is designed to recognize fire from the RGB value, movement, and the pixel area of fire in the image captured by the webcam. The fire detection system is designed with the webcam as the data input and the system output would be the warning text that states “ADA API” accompanied by an alarm sound. Therefore, this detection system would be appropriate to be used in house-shops or minimarkets that generally has a PC as the shop’s inventory item.

The outcome of this final assignment is a prototype of a simple fire detection system that can be used in house-shops.