

## ABSTRACT

Security systems in residential homes are commonplace for the public in general, such as locks on doors, windows and others. Basically, all of these security systems aim to support the security and comfort of residential homes from various aspects of crime such as theft, but we often encounter a case where the homeowner is careless or forgets to lock the door or window while outside his house which can cause an opportunity to occur the most common crime is theft.

Therefore, made a tool that is able to minimize the case with the project name “detection opens ware for anticipation of theft using microcontroller” this tool serves to inform the user if the device is open by using the signal sent by the light sensor and vibration sensor on ATMEGA328P IC then the data will be processed to turn on the speaker and send a direct notification to the owner's cellphone. This tool will have the advantage of functions and features and a more potent design than the comparison products that are common in the market so that this tool can be more easily used. The way this device works utilizes a light sensor and vibration sensor so that when the device is exposed to light or vibration that is strong enough from an open device such as doors and windows, this tool will send a notification to inform the user, this tool consists of various components between the light sensors, vibration sensor, power supply, IC ATMEGA328P, buzzer, clock, casing and various other supporting components.

This tool works on light intensity starting from 100 lux and above with a range of 2000 or 1x lux for operating the light sensor function. And the vibration at the vibration level of  $8\text{m} / \text{s}^2$  and so on, the results are based on the results of measurements carried out on residential homes with luxmeter and vibration meter applications.

**Keywords: ATMEGA328P IC, devices, sensors, power, portable, speakers.**