

## **Abstract**

The laboratory is the supporting facility for the studying that is concerned, and the basic source of of science and education development. In the laboratory of the Faculty of Applied Sciences there are some inventories of laboratory devices whose total value reaches hundreds of million rupiah. Those devices also have a high risk of loss, especially if the device is often used by many students. To reduce the loss of the device, especially the Pneumatic Board PLC (which worths hundreds of million rupiah), it is necessary to have a tool that can monitor the devices inside a laboratory.

By using the Internet of Things technology, we can reduce the loss probability of devices inside the laboartory. So, this technology will help laboratory staffs in monitoring the devices in the laboratory.

This tool that can help to reduce the loss probability of devices in laboratory by monitoring it from the smartphone, using ESP8266 and GPS module. This tool provides feature that can help staffs to see the devices in the table by collecting mac address data from the access point every few minutes or second (depends on how we wet it) and if there are some switching of the devices between laboratories then mac data addresses will be sent to the database. Besides that, if the devices are moved out of the laboratory and can not be detected by the wifi network anymore, the monitory system will change automatically using the GPS module by using the GSM module to send data to the database. If we can implement this tool technology in the laboratory, we can easily monitor every devices in the laboratory.

**Keywords:** Laboratory, Internet of Things, database, mac address, GPS module.