

Universiti Teknologi MARA

**Monitoring Air Conditioning in Class using GSM
Technology**

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**Thesis submitted in fulfilment of the requirements for Bachelor of
Computer Science (Hons) Data Communication and Networking
Faculty of Computer and Mathematical Sciences**

DECEMBER 2018

STUDENT DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or question from the work of the people, published or otherwise are fully acknowledge in accordance with the standard referring practices of the discipline.

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ABSTRACT

Air conditionings are provided in most classrooms or lecture halls in high education institutions as they provide comfortable temperature for students during lecture hours. However, the increasing number of universities has increased the amount of energy demand in Malaysia. Leaving the classrooms and lecture halls without switching off the air conditionings after lecture hour ends has led to energy wastage problem. Polis Bantuan (PB) in UiTM Perlis have the responsibility in ensuring that all of the air conditionings in the classrooms and lecture halls have been switched off to prevent electricity wastage. In order to reduce the PB burden of having to go and check for every classroom and lecture hall, a system for monitoring air conditioning usage from PB's mobile phone is proposed. The prototype system allows PB to monitor whether an air conditioning unit in a classroom or lecture hall is on or off. The prototype system requirements are Arduino UNO R3 board, LM35 temperature sensors, a GSM module as well as Arduino IDE. Three experiments were conducted in this project which are the functionality test of LM35 temperature sensors, GSM network performance and functionality of the completed prototype. Result from the functionality test of LM35 temperature sensors shows that the sensors are able to produce quite accurate reading. The result of GSM network performance tested on 3 selected locations shows that there is not much difference in the delay of SMS transmission, which means the system is able to provide real time information. The accuracy test done on the prototype system shows that the system is able to tell whether the air condition unit is on or off. In the future, this project which was successfully implemented has potential to assist PB to monitoring classroom and lecture hall air conditions in UiTM Perlis.

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