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SMART AGRICULTURE SYSTEM WITH INTERNET OF THINGS USING RASPBERRY PI

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations, Universiti Teknologi MARA, regulating the conduct of my study and research.

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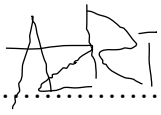
Signature of Student	:	 ……..
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ABSTRACT

The term used for networking of objects, equipment, vehicles, and other electronics device into the network for information exchange purpose is called Internet of Things (IoT). Nowadays, IoT is widely used for connecting device and collecting data information. Therefore, the use of IoT is very relevant for agriculture. The project is about smart agriculture system that is implemented with IoT. The system is combined with irrigation system in order to cope with the unpredictable weather in Malaysia. Raspberry Pi 4 Model B is used as the microcontroller of this system. DHT22 and soil moisture sensor is used to detect the temperature and humidity in surrounding and moisture level of the soil respectively where the output will be displayed on smartphone and computer. So, Smart Agriculture Systems with Internet of Things using Raspberry Pi brings a tremendous impact on the farmer's working method. Plus, it will also bring a positive effect on the crop production in Malaysia. Where about 66.67% water saving rate in a month and 24.44% water savings rate in a year can be achieved when using IoT-based irrigation systems compared to traditional irrigation systems. This would save the expenditure for hiring workers and avoid water wastage in daily needs. Smart Agriculture using IoT with Raspberry pi also show the data or the value of DHT22 and soil moisture level on the Ubidots Dashboard to monitor or observe the real time sensor reading and Ubidots server as data storage while providing data for Raspberry Pi control water pump for water pump on or off.

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TABLE OF CONTENTS