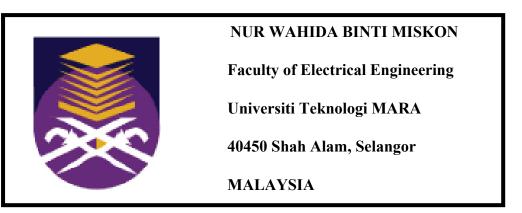# ARDUINO BASED HUMIDITY AND TEMPERATURE SENSOR LOGGER FOR ENVIRONMENT MONITORING

This thesis is presented in partial fulfillment for the award of the Bachelor of Engineering (Hons) Electronics

UNIVERSITI TEKNOLOGI MARA

NUR WAHIDA BINTI MISKON

Faculty of Electrical Engineering

Universiti Teknologi MARA

40450 Shah Alam, Selangor

MALAYSIA

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Nur Wahida Binti Miskon

2009390337

Faculty of Electrical Engineering

Universiti Teknologi MARA

40450 Shah Alam, Selangor

ABSTRACT

This project is to develop a Humidity and Temperature Sensor Logger and Monitoring using Arduino. The device is used to measure and store data of temperature and relative humidity of target area. Using this system, monitoring is performed automatically so that no manual operation to the instruments is applied during whole period of monitoring. The three pins on the sensor connect the two devices. The pins are inserted into the Arduino through the two-wire digital serial interface, and digital data is transmitted here. The Arduino will be programmed with the specific Arduino software. After the setup a coding is inputted to Arduino boot loader chip and the sensor is ready to be run and measure. It will read out the humidity and temperature values which then are stored into the SD card and displayed on the LCD. Based on the sensor, the accuracy of the temperature should be within $\pm2^{\circ}C$, while the relative humidity is $\pm5\%$.

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CHAPTER 1

INTRODUCTION

1.1   INTRODUCTION

Data logger is an electronic device which based on a digital processor or computer. It records data over time or in relation to location either with a built in external instruments and sensors or via active sensor. Usually this device is portable, battery powered and small equipped with a microprocessor, sensors and internal memory for data storage. Some data loggers have a local interface device like keypad or LCD and can be used as a stand-alone device, whereas others interface with a personal computer and use software to activate the data logger. It then view and analyze the collected data. Data logger in general purpose types for a range of measurement applications is different with a very specific device for measuring in one environment or application type only. The general purpose types are common to be programmable.

One of the main advantages of using data loggers is the ability to collect data on a 24-hour basis automatically. Data loggers are left unattended and typically deployed to measure and record information for the duration of the monitoring period after being activated. This will allow for an accurate, comprehensive picture of the environmental conditions being monitored, such as relative humidity and air temperature.