**SCHOOL OF DIGITAL MEDIA AND INFOCOMM TECHNOLOGY (DMIT)**

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| **Submitted by:** |  |

|  |  |
| --- | --- |
| **Student ID** | **Name** |
| 1625231 | Tan Ru Bin |
| 1111111 | Chen Yan Jiun |
| 2222222 | Kennard |

**IOT CA2**

**Step-by-step Tutorial**

**DIPLOMA IN BUSINESS INFORMATION TECHNOLOGY**

**DIPLOMA IN INFORMATION TECHNOLOGY**

**DIPLOMA IN INFOCOMM SECURITY MANAGEMENT**

**ST0324 Internet of Things (IOT)**

**2017/2018 Semester 1**

**Table of Contents**

[Section 1 Overview of the application 2](#_Toc480809613)

[A. What is the application about? 2](#_Toc480809614)

[B. Summary of the steps that will be described 2](#_Toc480809615)

[C. How does the final RPI set-up looks like? 2](#_Toc480809616)

[D. How does the web application look like? 2](#_Toc480809617)

[Section 2 Hardware requirements 3](#_Toc480809618)

[Hardware checklist 3](#_Toc480809619)

[Section 3 Whatever your section header is 3](#_Toc480809620)

[Section 4 Whatever your section header is 3](#_Toc480809621)

[Section 5 Whatever your section header is 3](#_Toc480809622)

# Section 1 Overview of project

* 1. Where we have uploaded our tutorial

https://github.com/rub1nt/SLEEPDEEP

* 1. Why have we chosen to upload to this site

GitHub is a development platform built for developers ranging from open source to business. Any user can easily host and review the codes. It helps that it is easy to learn and manage. Changes made to the git project can immediately be updated after a commit, this allow users to sync their codes before they start working on it. There are also several tutorials on the web if we were to face any problems managing in github.

* 1. What have we uploaded

A rough outline of what has been uploaded there

* 1. What is the application about?

The application is a baby monitoring device that aims to help parents to learn and observe the sleeping patterns of their baby based on the motion and temperature chart. When temperature falls or rises to uncomforatble levels for the baby, a buzzer sounds off in the parents room to alert them. Parents are also able to control the night light in the baby’s room remotely from the website which is accesible by the phone as well.

* 1. Summary of the steps that will be described

Provide a bullet list of the steps that will be covered in the other parts of this tutorial

|  |  |  |
| --- | --- | --- |
|  | Section | Description |
|  | Overview |  |
|  |  |  |
| Sections x to x provides the step-by-step instructions to set up the application | | |
|  | Hardware requirements | Provides overview of hardware required |
|  |  |  |
|  |  |  |
|  |  |  |

Provide a bullet list of the steps that will be covered in the other parts of this tutorial

|  |  |  |
| --- | --- | --- |
|  | Section | Description |
|  | Overview | Get an overview of what this project is about what where the source codes can be found |
|  |  |  |
| Sections x to x provides the step-by-step instructions to set up the application | | |
|  | Hardware requirements | Provides overview of hardware required |
|  |  |  |
|  |  |  |
|  |  |  |

* 1. How does the final RPI set-up looks like?

Provide a photo of your final RPI set-up

* 1. How does the web or mobile application look like?

Provide a screenshot or screenshots of your web app or mobile app

# Section 2 Hardware requirements

Hardware checklist

### LED

|  | Task | |
| --- | --- | --- |
|  | For this setup, the LED would be representing the baby’s night light in his/her room. It will later be used for parents to control the LED remotely from their room. | **LED** |

### Resistor for LED

|  | Task | |
| --- | --- | --- |
|  | * Resistors is required to connect LEDs to the GPIO pins of the Raspberry Pi to ensure small current flow. * This will ensure that the Raspberry Pi does not burn out or get damaged from the LED drawing more current |  |

### PIR Motion Sensor

|  | Task | |
| --- | --- | --- |
|  | The PIR sensor uses the pattern of infrared energy in its surroundings to detect when something nearby has moved. Hence, it will be used to detect the movement of the baby for this setup.  As for the sensitivity of the HC-SR501 PIR sensor, adjust both trimpot to the middle for optimal sensitivity and time before next trigger |  |

### Buzzer

|  | Task | | |
| --- | --- | --- | --- |
|  | | The buzzer would be used to alert the parents in their room when the temperature falls/rises to uncomfortable levels for the baby. It will create a beeping noise when it is triggered  A buzzer typically has 2 pins   * + VOUT – To be connected to a GPIO pin to control its value   + GND – To be connected to ground | **Buzzer** |

### DHT11 Temperature and Humidity Sensor

|  | Task | |
| --- | --- | --- |
|  | The DHT11 is able to capture humidity and temperature values using a capacitive humidity sensor and a thermistor to measure the surrounding air, and produces a digital signal on the data pin.  However for our setup we would only be using the temperature values ( would be done by the coding part ) since there is not much use of humidity values in a room environment.   * The sensor has 4 pins.   + VCC –Connect to power   + DATA – The output value to determine the temperature   + NC – Meaning no connection   + GND – Connect to ground | **DHT11** |

### 10k Ω Resistor for DHT11 sensor

|  | Task | |
| --- | --- | --- |
|  | * For the circuit work it requires the addition of “pull-up resistor” to the DATA line of the DHT11 sensor connected to the VCC line * For the circuit in addition of 10K ohms resistor is required * You can recognise a 10K ohms resistor by its color bands (brown:black:orange:gold) | **10K Ω RESISTOR**  **10K ohms resistor** |

# Section 3 Whatever your section header is

Whatever your section contents are

# Section 4 Whatever your section header is

Whatever your section contents are

# Section 5 Whatever your section header is

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**-- End of CA2 Step-by-step tutorial --**