

**Universiti Teknologi MARA**

**Smart lamp alert system using android**

**Eiman Iqmal Bin Zulkiflie**

**Thesis submitted in fulfilment of requirement of  
Bachelor of computer science (Hons.) Faculty of  
computer science and mathematics**

**JANUARY 2022**

## STUDENT DECLARATION

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

.....*Eiman*.....

EIMAN IQMAL

2020997137

JANUARY 30, 2022

## **ABSTRACT**

Purpose on doing the research is to help user to save the electrical energy usage at home, especially at night and this research is focusing on the light use in the house. This research presents the performance of the smart lamp system that allow user to interact with the system from mobile device by connect the system with Wi-Fi. The suitable component to use for the research is studied to gain the best outcome. The methodology that been use is studied to give the best flow of the research. The method uses in the research to create an application that allow user to control the system from the mobile device is studied. The design of the system is studied to create the best possible flow of the system to achieve the objective. Development of the system has followed the research study in methodology. The result of the research determines by user testing the system by themselves after the system has been completed. As for the result gain, the feature of the system could be added in the future research to allow user control most of the home appliances.

## TABLE OF CONTENTS

<b>CONTENT</b>	<b>PAGE</b>
<b>SUPERVISOR APPROVAL</b>	ii
<b>STUDENT DECLARATION</b>	iii
<b>ACKNOWLEDGEMENT</b>	iv
<b>ABSTRACT</b>	v
<b>TABLE OF CONTENTS</b>	vi
<b>LIST OF FIGURES</b>	ix
<b>LIST OF TABLES</b>	x

### **CHAPTER ONE: INTRODUCTION**

1.1	Background of Study	1
1.2	Problem Statement	2
1.3	Project Question	3
1.4	Project Objective	4
1.5	Project Scope	4
1.6	Significance of Study	4
1.7	Summary	5

### **CHAPTER TWO: LITERATURE REVIEW**

2.1.	Introduction	6
2.2.	Overview of Mobile Application	7
2.2.1.	Development of Mobile Application	7
2.2.2.	Operating System of Mobile Device	8
2.2.3.	Notification of Mobile Device	10
2.3.	Overview of Internet of Things	11
2.3.1.	Home Automation	12
2.4.	Communication Protocol	13
2.4.1.	ZigBee	13

2.4.2.	Bluetooth	14
2.4.3.	Z-Wave	15
2.4.4.	Wi-Fi	15
2.5.	Feature of Home Automation	16
2.5.1.	Safety	16
2.5.2.	Remote Access	16
2.5.3.	Light Sensor	17
2.5.4.	Motion Sensor	17
2.6.	Comparison Between Existing and Propose System	18
2.7.	Summary	19

## **CHAPTER THREE: METHODOLOGY**

3.1.	Introduction	20
3.2.	Operational Framework	20
3.2.1.	Planning Phase	22
3.2.2.	Requirement Phase	23
3.2.3.	Design, Development and Testing Phase	24
3.2.4.	Documentation Phase	25
3.3.	System Methodology	25
3.3.1.	Flowchart	25
3.3.2.	Use case	26
3.3.3.	Development Method	27
3.4.	System Architecture	28
3.4.1.	IoT Architecture	28
3.5.	Hardware and Software Requirement	29
3.5.1.	Hardware Requirement	30
3.5.2.	Software Requirement	30
3.6.	Summary	31

## **CHAPTER FOUR: DESIGN, DEVELOPMENT AND TESTING**

4.1.	Introduction	32
4.2.	Project Design	32
4.2.1.	Homepage Application	33
4.2.2.	Time Set Page Application	34
4.2.3.	IoT Physical Design	35
4.2.4.	Prototype	36
4.3.	Project Development	36
4.3.1.	Light Motion Sensor	37
4.3.2.	Time Auto Off	38
4.3.3.	Time Set Off	39