Universiti Teknologi MARA

Kumon Attendance System using RFID

Hadirah Irdina Helimi

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

DECEMBER 2019

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 quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

……
HADIRAH IRDINA BINTI HELIMI
2017737301

DECEMBER 13, 2019

ABSTRACT

KUMON is the largest and most well-known self-learning enrichment centre in the world with over 4 million students currently enrolled across 51 countries and regions. It has established a strong recognition in Malaysia by helping thousands of Malaysian children self-learn and self-develop their potential. In addition, Kumon Kota Bharu have been established in year 2014 and currently have 100 students from different level of grades. Presently, Kumon Kota Bharu center does not have a proper system for monitoring their students' attendance. It still practicing manual way of taking manually appearance and also detail of student information still on paper which less secure. Therefore, the objective of research is to develop Kumon Attendance System using Radio Frequency Identification that tested at Kumon center with 30 respondents. The methodology phase using agile method by implementing the waterfall mode that used to identify and analyse information about the project. It consists of five phase methodology which is information gathering, planning, design and development, testing and evaluation and documentation. The result presented contains functionality test and usability test. Functionality performed due to analysed the system if there are bugs or error during the system. In order to conduct the usability test, a set of the questionnaire was distributed among parents and kumon center owner. The result found that 53.3% participant agreed that the system is beneficial to be implemented in Kumon center throughout Malaysia.

TABLE OF CONTENT

CONTENT **PAGE**

SUPERVISOR APPROVAL i

STUDENT DECLARATION ii

ACKNOWLEDGEMENT iii

ABSTRACT iv

TABLE OF CONTENT v

LIST OF FIGURES viii

LIST OF TABLES x

LIST OF ABBREVIATIONS xii

CHAPTER ONE: INTRODUCTION 1

1.1 Background of Study 1
1.2 Problem Statement 3
1.3 Research Objective 3
1.4 Research Scope 3
1.5 Research Significance 5
1.6 Organization of the Thesis 6

CHAPTER TWO: LITERATURE REVIEW 7

2.1 Introduction 7
2.2 Radio-Frequency Identification (RFID) 7
2.2.1 Radio-Frequency Identification Reader 8
2.2.2 Radio-Frequency Identification (RFID) Tags 9
2.2.3 Low Frequency Radio-Frequency Identification (LF RFID) 10
2.2.4 High Frequency Radio-Frequency Identification (HF RFID) 11

4.5 Database 49
4.5.1 Database Structure 49
4.5.2 Table 49
4.6 Implementation 51
4.6.1 Interface Result for Web Based 52
4.6.2 Homepage 52
4.6.3 Login Admin and Parent 54
4.6.4 Dashboard Menu for Admin Module 55
4.6.5 Student Menu 55
4.6.6 Parent Menu 58
4.6.7 Attendance 58
4.6.8 Report 59
4.6.9 Dashboard Menu for Parent Module 59
4.7 Summary 61

CHAPTER FIVE: RESULT AND ANALYSIS 62

5.1 Introduction 62
5.2 Testing 63
5.2.1 Functionality Test 63
5.2.2 Usability Test 63
5.3 Testing Result 64
5.3.1 Functionality Test 65
5.3.2 Usability Test 67
5.6 Summary 79

CHAPTER SIX: CONCLUSION AND RECOMMENDATION 80

6.1 Conclusion 80
6.2 Recommendation 81

REFERENCES 82

APPENDICES 85