# Universiti Teknologi MARA

# Happy Smile Dental Clinic Appointment System (HSDCAS)

Muhammad Nasri Bin Mahmod

Thesis submitted in fulfilment of the requirements for Bachelor of Information Systems (Hons.) Business Computing College of Computing, Informatics and Media

February 2023

## ACKNOWLEDGEMENT

By the name of Allah, the Most Gracious and most Merciful

Alhamdulillah, praises and thanks to Allah because of His Almighty and His utmost blessings, I was able to complete this final year project "Happy Smile Dental Clinic Appointment System (HSDCAS)" within the time duration given. Even though I have faced many difficulties and challenges in completing this report I was able to figure out the problem. I would like to express my gratitude to all those who contributed to the completion of this study. Thank you to my supervisor, Ts. Dr. Hasiah Binti Mohamed @ Omar, for her valuable guidance, contribution of stimulating suggestions, generous assistance, and patience. I also would like to thank my lecturer CSP600 and CSP650, Madam Norulhidayah Isa lecturer of Universiti Teknologi MARA Kuala Terengganu, and lecturers and others involved in this research for their commitment and contribution in providing useful information and ideas. The success and final outcomes of this report required a lot of guidance, constant support and advice, encouragement, and useful suggestion. Without the morale support, advice, and knowledge given by them, I would not be able to finish this project.

Special appreciation also goes to my beloved parents and and my eldest sister who is also a dentist, for their prayers, cooperation, finance and encouragement throughout my journey of completing this project. They constantly gave strengths and unceasing words of support and advices to complete this report despite of obstacles I faced. Millions of thanks for your blessing and for always being by my side whenever I need comfort and good counsel. May Allah S.W.T repay all of your kindness. Without your support, I would not be able to complete my research successfully.

I would like to express my gratitude to my comrades-in-arms and seniors for their support and guidance during this course and the writing of my thesis. I appreciate every time we had together. and would not be able to complete my thesis without their help. May Allah S.W.T. repay their kindness.

Dr Nurul Huda, the dentist of Klinik Happy Smile, spent her time with me to help me find the operational system of the clinic and experience being a first-time user. Online sources, articles and pages helped me to complete this report with all the information provided about dental appointment system, from the background of the company to every information system used in the KHS. All the websites also helped me to understand better about the cooperation of this KHS.

## ABSTRACT

Organizations need to invest in information technology and information systems to be more competitive. Klinik Happy Smile (KHS) is a dental clinic that current business process was using manual process which is using log book to schedule the appointment date and time and WhatsApp for patient book the slot. That make the business process were not satisfied by user. From that Happy Smile Dental Clinic Appointment System (HSDCAS) was develop to enhance the business process became easier and more efficient. The HSDCAS is a web-based system that was developed for KHS. HSDCAS will assist patient in booking for dental appointment, and save time through a website functionality. The objective is to design and develop an online appointment system for KHS. On top of that, evaluation of the system's functionality was only conducted. The scope of the project includes systematic scheduling in queue list and appointment module with notification. Adapted waterfall model was used in developing HSDCAS. Eight golden rules of interface design were used to develop the interface of HSDCAS. System's functionality and usability were evaluated through system testing and user evaluation. There were three experts' lecturer from UiTM Kuala Terengganu, their review resulted in a positive outcome, where experts agreed that this appointment system is efficient for patient and beneficial to the company. User evaluation also been conducted using System Usability Scale (SUS) and the result is 72.5 which indicate the system is good. Shows that the HSDCAS is a good based on the general guidelines for interpreting SUS scores. In the recommendation the HSDCAS should allow customers to do online transactions using the system. Also this system can give the patient access to a chat space for easier patient to ask something. The following suggestion is to receive notification to inform the patient of the appointment's status via email or WhatsApp so that the patient not forget their appointment.

# **TABLE OF CONTENTS**

#### CONTENT PAGE SUPERVISOR APPROVAL ii STUDENT DECLARATION iii ACKNOWLEDGEMENT iv ABSTRACT v **TABLE OF CONTENTS** vi LIST OF FIGURES ix LIST OF TABLES xii **LIST OF ABBREVIATIONS** XV

# **CHAPTER ONE: INTRODUCTION**

1.1	Background of Study	1
1.2	Current Business Process	2
1.3	Problem Statement	5
1.4	Project Objectives	6
1.5	Scope	6
1.6	Significance	9
1.7	Project Framework	10
1.8	Conclusion	12

## **CHAPTER TWO: LITERATURE REVIEW**

2.1	Introduction	13
2.2	Management Information System	14
	2.2.1 Appointment system	16
2.3	Dental Appointment System	17
2.4	Human-Computer Interaction (HCI) Theory	18
	2.4.1 Eight Golden Rules of Interface Design	19
2.5	System Development Model	25
	2.5.1 Waterfall Model	26

2.6	Similar Existing Systems	29
	2.6.1 Myne Dental Clinic (mynedental.com)	30
	2.6.2 Q&M Dental (qandm.com)	31
	2.6.3 The Dental House (thedentalhouse.my)	33
	2.6.4 Comparison between Similar Existing Systems	34
2.7	Implication of Literature Review	34
2.8	Conclusion	37

# **CHAPTER THREE: METHODOLOGY**

3.1	Introduction	38
3.2	Project Development Methodology	39
3.3	Phase 1 - System Planning	43
	3.3.1 Project Planning Gantt Chart	44
	3.3.2 Preliminary Investigation	46
	3.3.3 Collect and Gather Data	47
3.4	Phase 2 - System Development	49
	3.4.1 Business Model	52
	3.4.2 The lean canvas model of HSDCAS	53
	3.4.3 Design	53
	3.4.3.2 Data flow diagram	55
	3.4.3.3 Entity relationship diagram	56
	3.4.3.4 Site map	59
	3.4.3.5 User interface	61
	3.4.4 Implementation	66
	3.4.5 Testing & Evaluation	67
i.	Test plan	67
ii.	Test Case	69
	3.4.6 Expert Evaluation	71
iii.	User Evaluation	73
3.5	Phase 3 - System Documentation	74
3.6	Conclusion	75