MYAPPOINTMENT SYSTEM

WOON PEI WEN

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG PENGESAHAN STATUS TESIS

 JUDUL:
 MyAppointment System

 SESI PENGAJIAN:
 SESI 2014/2015

 Saya
 Woon Pei Wen

mengaku membenarkan tesis (PSM/Sarjana/Doktor Falsafah) ini disimpan di Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dengan syarat-syarat kegunaan seperti berikut:

- 1. Tesis dan projek adalah hakmilik Universiti Teknikal Malaysia Melaka.
- 2. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan untuk tujuan pengajian sahaja.
- 3. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.
- 4. ** Sila tandakan (/)

 SULIT	(Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang di dalam AKTA RAHSIA RASMI 1972)
 TERHAD	(Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi/badan di mana penyelidikan dijalankan)

(TANDATANGAN PENULIS) Alamat tetap: 9, HALA TASEK TIMUR 3, TAMAN INDAH SAKTI, 31400 IPOH, PERAK.

(TANDATANGAN PENYELIA)

DATIN <u>NURAZLINA BINTI MD SANUS</u>I Nama Penyelia

Tarikh: _____

Tarikh:

CATATAN: * Tesis dimaksudkan sebagai Laporan Akhir Projek Sarjana Muda (PSM) ** Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak berkuasa.

MYAPPOINTMENT SYSTEM

WOON PEI WEN

This report is submitted in partial fulfilment of the requirements for the Bachelor of Computer Science (Software Engineering)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2015

C Universiti Teknikal Malaysia Melaka

DECLARATION

I hereby declare that this project report entitled

MYAPPOINTMENT SYSTEM

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT	:	Date:
	(WOON PEI WEN)	
SUPERVISOR	<u>.</u>	Date:
(DATIN NURAZLINA BINTI		

C Universiti Teknikal Malaysia Melaka

DEDICATION

This is dedicated to my beloved family, thank you very much for the unconditional supports with my studies. Thank you for giving me the chance to take my desired field of studies and provide me a chance to improve myself through the journey of my life.

iii

ACKNOWLEDGEMENT

I would like to take this opportunity to express my gratitude and deep regards to my supervisor, Datin Nurazlina Binti Md Sanusi who help, giving me suggestions and guidance throughout the progress of the report.

Besides that, I would like to take this opportunity to thank my friends for giving me support in my project work when I faced failures in completing the project.

Lastly, I would like to thank my beloved parents for giving me support and motivation throughout my project. Without their blessings, I would never have this chance.

ABSTRACT

Appointment is a consultation or meeting with someone at a particular time and it can be occured in everywhere. In university, appointments between students and lecturers are very important in order to solve the academic problems. However, there are many problems occured when the students make appointments with the lecturers. One of the problems is wasting student's time. For example: students that did not have lecturers phone number need to go to lecturer's room to make the appointment. Sometimes when the lecturers is not in their room, students have to go for few times until they success make their appointment.

MyAppointment is very important. This system is used to solve the problems of making appointment between students and lecturers. It also will provides and supports the users for reserving their appointments. Besides that, it also will save the time for the students to make the appointment with the lecturers because students can check the lecturer's schedule before they make the appointment. Lastly, this system can provide an analytical data for the lecturers to check the number of appointment between lecturers and students.

ABSTRAK

Temujanji ialah satu perundingan atau mesyuarat dengan seseorang pada masa tertentu dan ia boleh berlaku di mana-mana. Dalam universiti, In university, temujanji antara pelajar dengan pensyarah sangat penting untuk menyelesaikan masalah akademic. Walau bagaimanapun, terdapat banyak masalah berlaku apabila pelajar membuat temujanji dengan pensyarah. Salah satu masalah ialah membuang masa pelajar. Sebagai contoh: pelajar yang tidak mempunyai nombor telefon pelajar perlu pergi ke bilik pensyarah untuk membuat temujanji. Kadang-kala, apabila pensyarah tidak ada dalam bilik, pelajar perlu pergi beberapa kali hingga mereka berjaya membuat temujanji mereka.

Oleh itu, "MyAppointment System" sangat penting. Sistem ini dibangunkan untuk menyelesaikan masalah membuat temujanji antara pelajar dengan pensyarah. Ia memberi sokongan kepada pengguna untuk membuat temujanji awal. Selain itu, ia dapat menjimatkan masa untuk pelajar membuat temujanji dengan pensyarah kerana pelajar boleh tengok jadual pensyarah sebelum mereka membuat temujanji. Akhir sekali, sistem ini boleh memberikan data analisis untuk pensyarah untuk menyemak jumlah nombor temujanji antara pelajar dengan pensyarah dan kehadiran pelajar.

TABLE OF CONTENTS

CHAPTER	SUBJECT	PAGES
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	X
	LIST OF FIGURES	xi
CHAPTER 1	INTRODUCTION	
	1.1 Project background	1
	1.2 Problem statement	2 3
	1.3 Objective	
	1.4 Scope	4
	1.5 Project Significance	5
	1.6 Expected Output	6
	1.7 Conclusion	6
CHAPTER 2	LITERATURE REVIEW AND PROJECT	
	METHODOLOGY	
	2.1 Introduction	7
	2.2 Domain	8
	2.3 Existing System	8
	2.4 Questionnaire	11
	2.5 Project Methodology	15
	2.6 Project Requirement	16
	2.6.1 Software Requirement	16
	2.6.2 Hardware Requirement	17
	2.7 Project Schedule and Milestone	18
	2.7.1 Project Schedule	18
	2.8 Conclusion	19
CHAPTER 3	ANALYSIS	
	3.1 Introduction	20
	3.2 Problem Analysis	21

	3.3 Requirement Analysis	21
	3.3.1 Data Requirement	22
	3.3.1.1 Input Data	22
	3.3.1.2 Output Data	23
	3.3.1.3 Internal Data	23
	3.3.2 Functional Requirement	26
	3.3.2.1 Use Case Diagram	28
	3.3.2.2 Sequence Diagram	29
	3.3.3 Non Functional Requirement	37
	3.3.4 Other Requirement	37
	3.3.4.1 Software Requirement	37
	3.3.4.2 Hardware Requirement	38
	3.3.4.3 Network Requirement	38
	3.4 Conclusion	38
CHAPTER 4	DESIGN	
	4.1 Introduction	39
	4.2 High Level Design	39
	4.2.1 System Architecture	40
	4.2.2 User Interface Design	41
	4.2.2.1 Navigation Design	56
	4.2.2.2 Input Design	57
	4.2.2.3 Output Design	58
	4.2.3 Database Design	58
	4.2.3 Database Design 4.2.3.1 Conceptual and Logical	58
	Database Design	58
	4.3 Detailed Design	60
	4.3.1 Software Design	60 60
	4.3.1.1 Context Design	60
	4.3.1.2 Data Flow Diagram	60
	4.3.2 Physical Database Design	61
	4.4 Conclusion	67
		07
CHAPTER 5	IMPLEMENTATION	
	5.1 Introduction	68
	5.2 Software Development Environment	69
	Setup	
	5.3 Software Configuration Management	70
	5.3.1 Configuration Environment Setup	70
	5.3.2 Version Control Procedure	71
	5.4 Implementation Status	72
	5.5 Conclusion	73
CHAPTER 6	TESTING	
	6.1 Introduction	74
	6.2 Test Plan	75
	6.2.1 Test Organization	75
	6.2.2 Test Environment	76
	6.2.3 Test Schedule	77
	6.3 Test Strategy	77

	6.3.1 Classes of Tests	78
	6.3.1.1 Unit Testing	78
	6.3.1.2 Integration Testing	78
	6.3.1.3 System Testing	78
	6.3.1.4 User Acceptance Testing	79
	6.4 Test Design	79
	6.4.1 Test Description	79
	6.4.2 Test Data	79
	6.5 Test Result and Analysis	80
	6.6 Conclusion	80
CHAPTER 7	PROJECT CONCLUSION	
	7.1 Observation on Weaknesses and Strengths	81
	7.1.1 System Strengths	82
	7.1.2 System Weaknesses	82
	7.2 Propositions for Improvement	83
	7.3 Project Contribution	83
	7.4 Conclusion	84
	REFFERENCE	85
	APPENDICES I	86
	APPENDICES II	88
	APPENDICES III	90

LIST OF TABLES

TABLE	TITLE	PAGE
2.01	Software Requirement	17
2.02	Hardware Requirement	17
3.01	Input Data	22
3.02	Output Data	23
3.03	Lecturer Internal Data	23
3.04	Student Internal Data	24
3.05	Appointment Internal Data	24
3.06	Attendance Internal Data	24
3.07	Blocktime Internal Data	25
3.08	Logbook Internal Data	25
3.09	Subject Internal Data	25
3.10	Timetable Internal Data	25
3.11	Functional Requirement	26
3.12	Non-Functional Requirement	37
3.13	Software Requirement	37
3.14	Hardware Requirement	38
4.01	Input Design	57
4.02	Output Design	58
4.03	Student Table Database Design	61
4.04	Lecturer Table Database Design	62
4.05	Appointment Table Database Design	62
4.06	Attendance Table Database Design	63
4.07	Blocktime Table Database Design	64
4.08	Timetable Table Database Design	65
4.09	Logbook Table Database Design	66
4.10	Subject Table Database Design	67
5.01	Hardware Configuration	70
5.02	Version Control Procedure	71
5.03	Implementation Status	73
6.01	Test Organization	75
6.02	Test Schedule	77

LIST OF FIGURES

DIAGRAM TITLE

PAGE

2.01	Screenshot for Takaful Appointment System	9
2.02	Appointment System : usability aspect	10
2.03	Gender	11
2.04	Faculty	11
2.05	Education Level	12
2.06	Way to make appointment with lecturer	13
2.07	Frequency of student making appointment with lecturer	13
2.08	Problem Occurred When Making Appointment	14
2.09	Waterfall Model	16
2.10	Milestone	18
3.01	Use Case Diagram	28
3.02	Student login Sequence Diagram	29
3.03	Lecturer Login Sequence Diagram	29
3.04	Make Appointment	30
3.05	Check Appointment Status	31
3.06	Statistic	31
3.07	Logbook for student	32
3.08	Verify Logbook	33
3.09	Timetable setting for lecturer	34
3.10	Mark Attendance	35
3.11	Lecturer Check Attendance	35
3.12	Student Check Attendance	36
4.01	Layered Architecture	41
4.02	Login Page Interface	41
4.03	Student Main Page Interface	42
4.04	Search Faculty Interface	42
4.05	Search Date Interface	43
4.06	View Available Slot Interface	43
4.07	Make New Appointment Interface	44
4.08	Student View Appointment Interface	44
4.09	Edit Appointment Interface	45
4.10	Cancel Appointment Interface	45
4.11	Student Check Attendance Interface	46
4.12	Change Password Interface	46

4.13	View Logbook Interface	47
4.14	Edit Logbook Details Interface	47
4.15	Lecturer Main Page Interface	48
4.16	View Timetable Interface	48
4.17	Add New Student Interface	49
4.18	Add New Student Form	49
4.19	Timetable Setting	50
4.20	Add Timetable Setting Interface	50
4.21	Edit Timetable Setting Interface	51
4.22	Set Appointment Interface	51
4.23	Pending Appointment Interface	52
4.24	Check Attendance Interface	52
4.25	View Attendance Details Interface	53
4.26	Mark Attendance Interface	53
4.27	Logbook Interface	54
4.28	Logbook Details Interface	54
4.29	Statistic Interface	55
4.30	Statistic Information Interface	55
4.31	Navigation Design	56
4.32	Entity Relationship Diagram (ERD)	59
4.33	Context Diagram	60
4.34	Level 1 DFD	60
5.01	Deployment Diagram	67
6.02	Software Testing Process	73

C Universiti Teknikal Malaysia Melaka

CHAPTER I

INTRODUCTION

1.1 Project Background

Appointment is a consultation or meeting with someone at a particular time and it can be occured in everywhere. In university, appointments between students and lecturers are very important in order to solve the academic problems. However, there are many problems occured when the students make appointments with the lecturers. One of the problems is wasting student's time. For example: students that did not have lecturers phone number need to go to lecturer's room to make the appointment. Sometimes when the lecturers is not in their room, students have to go for few times until they success make their appointment. Furthermore, after the students already make the appointment with their lecturer, the lecturer may be forget the appointment because they busy with their works, having meeting or any emergency happened.

In order to solve these problems, an appointment system named MyAppointment has been proposed. MyAppointment will developed into a web application that can accessed through mobile device or computer. This system is used to solve the problems of making appointment between students and lecturers. This system can simplify the process of making the appointment because students can check the lecturer's schedule before they make the appointment. Lastly, this system can provide an analytical data for the lecturers to check the number of appointment between lecturers and students and also help the lecturers to have the documented evidence of the actual attendance of the students for PSM, Bengkel 1 and Bengkel 2.

1.2 Problem Statement

There are many problems occured when the student wants to make appointments with their lecturers. Below are some of the problems that occured during making appointment with lecturers.

i. Difficult to meet with lecturers

Students always cannot find their lecturers because the lecturers are not in their room even when their timetable is empty or in consultation hour. Futhermore, some lecturers did not leave any notices outside their room when they having emergency leave or important things to do. Students also cannot contact with the lecturers because they did not have lecturer's phone number. Furthermore, appointment making between lecturers and students always end up with poor outcomes. For example: if student cannot make it due to unforeseen circumstances and sending late notifications, it will send a not good impression to the student's progress

ii. Making appointment with lecturers is still in manual way

The process of making appointment between student and lecturer is still in manual way. Students that did not have lecturer's phone number need to go to the lecturer's room to make the appointment. If the lecturers not in their room, students have to go for few times until they success make their appointment. Therefore, student wasting a lot of time just to make appointment with the lecturers.

iii. Difficult to manage the appointment records

Since the process of making appointment is manually, some of the lecturers did not record down the appointment. They easily forget about their appointment because they busy with their works or any emergency happened. Even if the lecturers got record down the appointment time in their note book, they also have the chance to forget the appointment if they forgot to bring their note book along with them. Furthermore, if the lecturers have any emergency, lecturers cannot cancel appointment with their students if they did not have student's phone number. Besides that, lecturers also hard to check the number of appointment that their students make because manual system cannot provide a analytical data on the number of appointment that have already made. Beside lecturers, students are also having difficulties to manage the appointment records. For example: student has to keep a log book to keep track of his/her appointment with lecturer.

1.3 Objective

In order to solve all the problems that occurred in manual system, few objectives have to be achieves. The objectives of this project are:

- 1. To simplify the process of making appointment between students and lecturers.
- 2. To develop a system that can upgrade the manual system.

3. To provide analytical information based on the number of appointment between students and lecturers.

1.4 Scope

- i. Target User
 - Student
 - Lecturer
- ii. Module
 - Login Module
 - Users need to login to the system before they proceed for making an appointment.
 - Appointment Module
 - Student can make a new appointment if they found any available time slot in the lecturer's timetable for their selected lecturer.
 - Student or lecturer can cancel the appointment that have already confirmed when they haven any emergency occurred such as sick, meeting or outstation.
 - Report Module
 - Students can check their appointment's status after they made appointment with the lecturers.
 - Lecturers can check and update all the appointment that they made with students.
 - Lecturers can view the statistic based on the number of the appointment for a particular student.
 - Attendance Module
 - Lecturer can mark the attendance after the students have met with them.

- > Lecturer can keep track of the attendance of the student.
- Student can check their attendance to make sure their supervisor marked their attendance correctly.
- Logbook Module
 - Student can write their logbook after the lecturers have marked their attendance as presence.
 - Student can edit the logbook before the lecturers verify the logbook.
 - Lecturer need to verify the logbook after they have checked the logbook.

1.5 Project Significance

- Login Module
 - System can determine whether the login users are students or lecturers and direct them to their respective main page.
- Appointment Module
 - Student can make appointment with lecturer.
 - System will notify the lecturer if there are duplicated appointment times with different students.

1.6 Expected Output

At the end of this project, this system can help the students and lecturers to make the appointment directly at any time without seeing each other directly. This system also can help the lecturers and students to be informed of the number of appointment made by the students. Lastly, this system can help the lecturers to have the documented evidence of the actual attendance of the students for student PSM, Bengkel 1 and Bengkel 2.

1.7 Conclusion

The main purpose of this project is to solve the problems that occurred in the process of making appointment between the lecturers and students in the manual way. The developed appointment system give access flexibility to both students and lecturers as the system can be accessed through mobile device or computer and this project also provides documented evidence of the students attendance on the agreed appointments made based on the mutual agreement amongst both parties. In conclusion, the advantage of this system is to provide an efficiency and effective system for the users to avoid their wasting time when making the appointment.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

MyAppointment is a mobile application that provides a way to ease the students to make appointment with their lecturers in order to solve the problems occurred between students and lecturers. This project required some research and fact finding to support it. Therefore, literature review also plays an important role when a project is carried out.

In this chapter, facts and finding and literature review about relevant project and research about this system will be discussed. The purpose of literature review is to find relevant literature to support the project topic and conclude all the information that found in the literature.

2.2 Domain

Appointment is a consultation meeting with someone at a particular time and can be held at anywhere. In university, appointment is a consultation time between students and lecturers and it is important for the both parties to solve the academic problems.

2.3 Existing System

- (i) Case Study
 - Web Based Intelligent Appointment System

A web based on appointment system is done by Mohd Helmy Abd Wahab is to allow students and lecturers manage their appointment online. In order to save time, this appointment system allows both of the users interact through the web so they can arrange their time for appointment. The main orientation of the prototype for this system is to manage appointment and update the calendar. According to Mohd Helmy (2009), the use of intelligent agents have many benefits such as decrease time consume, work independent, search and filter important information that cannot done by humans.

According to Jenning and Woodridge, agent-based computing has taken place as "the next significant break-through software development". In this system, the agent can manage the information in the database and provide a status by comparing it with the inputs that entered by the users in order to achieve its design objectives.

٢

• Takaful Appointment System

Takaful appointment system is a system that own by Takaful Insurance. This system developed to reduce the time wasting by the users. They no need to go to the company or call to make appointment. In this system, users need to enter their personal information before they book their appointment. Users can freely choose the location and the time of appointment depends on their state and their free time.

TEMUJANJI

Sila masukkan butir-butir yang diperlukan dibawah ini;

1) TAHAP KESUNGUHAN BAGI TEMUJANJI YANG DIPOHON

Subjek Temujanji	Takaful - Untuk Diri Sendiri / Pasangan 🔹			
Kesungguhan Tujuan Temujanji	 SILA PASTIKAN TUJUAN ANDA Bincang dahulu, MINAT penyertaan tinggi Bincang dahulu, MINAT penyertaan sederhana Bincang dahulu, MINAT penyertaan rendah Bincang sahaja, PENYERTAAN lambat lagi Bincang sahaja, PENYERTAAN tak tahu Suka - suka sahaja, TIDAK MINAT menyertai pelan 			
Tahap pengetahuan mengenai pelan / produk Takaful	 TAHAP PENGETAHUAN BERKAITAN PRODUK TAKAFUL Tiada tahu apa-apa Telah tahu serba sedikit namun tiada pernah meyertai pelan takaful Telah tahu serba sedikit dan pernah / telah menyertai pelan takaful, 			
Mod Sumbangan (Jika berhajat menyertai pelan)	Tahunan Bajet Penyertaan (RM).			

2) MAKLUMAT PEMOHON

Nama	T. Lahir (dd/mm/yyyy)	
Email	Jantina	PEREMPUAN V
No Tel (H/P)	Pekerjaan	
No Tel (Rumah)	Pendapatan Bulanan (RM)	
No Tel (Pej)	Lokasi Skrg	

3) MAKLUMAT TEMUJANJI

Lokasi Temujanji			Tarikh Temujanji (dd/mm/yy)	
	Bandar			
	Negeri	W.Persekutuan 🔻	Waktu	
Mercu-tanda Lokasi (Landmark)				
Nota				

Peringatan;

Jika tuan/ puan berhasrat untuk terus menyertai pelan semasa perjumpaan kelak, sila pastikan perkara berikut dapat disediakan

1. Sumbangan penyertaan (RM) samada TUNAI, Cek atau kad kredit (Salinan Kad kredit diperlukan) 2. Salinan K.P pemohon dan peserta

3. Salinan Mykid / Surat Beranak Anak (Jika penyertaan bagi anak)

Figure 2.01 Screenshot for Takaful Appointment System

• Outpatient Appointment Scheduling in a Multi Facility System

This appointment system is created by using an experiment unit at an internal medicine department of a large outpatient ward in Nagoya university hospital. This appointment system were evaluated under two different evcironments namely no-show and patient punctuality. It designed by using Appointment Rule(ARULE) and Patient Sequence(PSEQ) that explored by Cayirli, Veral and Rosen(2006). There are ARULEs is Baily rule, Soriano rule, variable-interval rule and the PSWQ is based on the types of patients that is appointment patients, new patients and walk-ins.

• A web-based appointment system using short message service technology: usability aspect

A web-based appointment system is done by Mohd Helmy Abd Wahab that helps studens and lecturers always aware of the appointment. They involved short messaging system (SMS) technology in the system. When the system successfully records and appointment, it will transmits the signal to the receiver(lecturer).



Figure 2.02: Appointment System:usability aspect