Faculty of Computer Science and Information Technology

CENTRALIZED E-BOOKING FOR UNIMAS ROOM/HALL FACILITY

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**Bachelor of Computer Science with Honours
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I hereby declare that this project is my own work and all the sources have been quoted and acknowledged by means of complete references.

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ABSTRACT

Currently, UNIMAS has two method to book a room/hall which are manual and online system. Most of the department is using manual method which are slower and not efficient. The existing online system has limitation such as limited to the staff use only. This study is to develop an online automated booking system called Centralized E-booking for UNIMAS Room/Hall Facility. This proposed system is designed to replace the current existing method/system used to book a room/hall facility in UNIMAS. This proposed system allow the user to do the book by themselves. Administrator can manage the system, announcement and booking through the system. Standard procedure of booking has been identify after interview the person in charge in the department. Study of existing system and manual system have been carried out to make sure the basic function that need to be involve in the proposed system. The Software Development Life Cycle waterfall methodology have been chosen to develop the project. This proposed system will be developed according to six phases in the waterfall methodology. In the implementation phase, a booking algorithm have been created to make sure the booking process can successfully. After that, the system is released to the user and get the feedback in order to know whether they satisfy with the system or not. Lastly, the contribution, limitation and future work are discussed at the end of this proposed project.

ABSTRAK

Pada masa ini, UNIMAS mempunyai dua kaedah menempah bilik / dewan iaitu sistem manual dan dalam talian. Kebanyakan jabatan itu menggunakan kaedah manual yang lebih perlahan dan tidak efisien. Sistem dalam talian yang sedia ada terhad kepada penggunaan kakitangan sahaja. Kajian ini adalah untuk membangunkan satu sistem tempahan automatik talian dipanggil E-Tempahan Bilik / Dewan Kemudaha Berpusat Di UNIMAS. Sistem yang dicadangkan direka untuk menggantikan yang sedia ada yang digunakan untuk menempah kemudahan bilik / dewan dalam UNIMAS. Sistem yang dicadangkan membolehkan pengguna untuk membuat tempahan bilik / dewan sendiri. Pihak pengurusan boleh menguruskan sistem, pengumuman dan tempahan melalui sistem.

Prosedur am penempahan bilik telah dikenal pasti setelah sesi temu duga dibuat dengan orang yang berkaitan. Kajian sistem yang sedia ada dan sistem manual telah dijalankan untuk memastikan fungsi asas yang perlu terlibat dalam sistem yang dicadangkan. *"Software Development Life Cycle Waterfall Methodology"* adalah kaedah yang telah dipilih untuk membangunkan projek ini. Sistem yang dicadangkan akan dibangunkan mengikut enam fasa yang terdapat di dalam metodologi tersebut. Selepas fasa rekaan dan pelaksanaan, sistem ini didedahkan kepada pengguna untuk mendapatkan maklum balas berkaitan fungsi yang terdapat di dalamnya. Akhir sekali, segala maklum balas daripada pengguna dikaji dan beberapa penambah baikan boleh dilakukan pada masa hadapan.

Chapter 1: Introduction

1.1 Introduction

This chapter will introduce about the system that will be proposed. There are total seven sections in this chapter. This chapter will explain about the problem that lead to development of this system. The objective and scope of the project will be describe in this chapter. Methodology that will be used through this project will also be briefly explained. Significance of project and expected outcome also will be described at the end of this chapter.

1.2 Problem Statement

Currently, most of the booking system of facilities in UNIMAS is done manually. These facilities involve the room/hall in UNIMAS. There are few ways used to manage the booking such as using paper or using Microsoft excel. By using these two methods, staff have to manually create a timetable and search for the slot required upon the request from staff or student. Sometimes, the booking also done through email which means that we have to email the person in charge that we want to book a room. Then, the person in charge will have to reply whether it's approved or not. It also can be done by approaching the person in charge and request to book the room.

There is one department using computerized system. But, this existing system is limited because it is only accessible by staff. In order to using the system, end user have to make sure the software is installed on the computer since its using windows based platform. This result in limited access to the system.

Normally, we have to contact with the person in charge to book the room we want to use. The problem occurs when the person in charge is not available such as not in the office or busy with work. Also, we are unable book that room if we do not know what necessary document or forget to bring the required document. Sometimes, when we are available to meet with the person in charge, he/she is not around. We end up difficult to find a suitable time for both parties.

For manual booking system, the person in charge have to take longer time to check whether the time is available or not. They have to manually check the time slot that is requested to see if that slot is available or not. To find a specific record especially in huge quantity, we need to spend longer time to looking for it. This also increase the chances of having error in the data insertion since we do it manually.

Normally, there is only one person will be in charge to manage the booking process. If this person is not available, then we have to wait until him/her available before we can do the booking. The process to book a room is different in each department/places as well as the person that we need to contact to do the booking. The current manual system is not efficient and effective.

1.3 Objective

Objective 1: To design and develop an online automated booking system that can reduce the human errors for UNIMAS

We will design and develop an online automated booking system that can reduce the human errors for UNIMAS. Through up the project, we will study the current procedures of room/hall booking

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at UNIMAS. This will be useful to develop the online booking system with correct and standardized procedures.

Objective 2: To design and develop an online automated booking system to manage the booking process and replace the existing method

This system will provides a very flexible way to make or manage the booking. By using this system, user can booking any available room in the system without the need to approach the person in charge in different places.

Objective 3: To develop a system that allow the user to booking at anytime and anywhere as long they have internet access.

Through this system, we allow the user to book the room without the need to meet with the person in charge. We do not need to make appointment to discuss with the person in charge. Also, this system solve the problem to find a suitable time for both parties to find a suitable time required to booking a room/hall facility. This is because all the available and not available time of the selected date is shown on the page.

Objective 4: Provide search function to minimize the required searching time

As the booking is computerized, search function allow user/admin view or search the record history of booking room/hall facility. We just need to type what we want to search and will get the result in a few seconds. This minimize the time required to search a record. Also the administrative staff also can easily manage and view the booking through the system.

Objective 5: Design and develop an online booking system that is accessible by everyone

For the current system, it is limited to the staff only. This means only certain people can access to the system to make a booking. If student want to book a room, they have to inform the person in charge and fill the required form. Staff have to inform the requester weather the booking is approved or not. If not approved, they will have to deals to find a suitable time again and again. Through this system, notification will be sent to the requester whether the booking is approved or rejected.

1.4 Scope of Project

The scope of the user that will use the system are all people in the UNIMAS. It include staff, lecturer and student in UNIMAS. Lecturer and student will using this system to book room/hall in UNIMAS. Through this system, they can booking a room at anywhere and anytime. Staff here means the people working in the department, mainly is the lecturer. While the administrator of the system will be the person that has the right to approve or disapprove the booking.

Several function in included in this system, such as:

1. Admin can add new resources/place for booking.

2. Admin can choose to approve or not approve a booking request.

3. Admin can update the specified content in the webpage.

4. Admin can easily search for the available slot.

5. Admin can set the condition/requirement in order to make a booking.

6. Search function allow the admin to check the previous booking record.

7. User can booking a place through online.

8. There is an option to allow the user to attach supporting document when booking a place.

9. Both sides (admin and user) will get email notification regarding the booking.

10. Able to cancel a booking according to booking regulations.

1.5 Methodology

According to (Margaret, 2009), methodology is a conceptual model used in project management that describes the stages involved in an information system development project, from an initial feasibility study through maintenance of the completed application. As we know, methodology is defined as a set/collection of methods, rules or principles that we used for solving a problems. It also used to specify how and when each method should be used. The most common methodology used is system development life cycle (SDLC). In SDLC, there are five stages of process which are planning, analysis, design, implementation as well as maintenance and support.

The description of each stage is shown in the table below:

Stage	Description
Planning	- Identify and respond to a problem
	- Incorporating the project management and system development processes and activities.
	- Ensuring that the goal, scope, budget, schedule, technology, and system development processes, methods, and tools are in place
Analysis	- Provides a closer look at the problem or opportunity
	- Documents the specific needs and requirement for the new system

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Design	- The project team uses the requirement and "to be" logical models to design the architecture to support the new information system. - This includes designing the network, hardware configuration, databases, user interface, and application programs.
Implementation	- The development or construction of the system, testing and installation. - The provision of training, support, and documentation
Maintenance and Support	- The system is updated to respond to bugs, new features, or to adjust to a changing business environment.

Table 1.1 Basic stages that required in the development of a system

But, for this project SDLC Waterfall Model will be used to develop the system. Waterfall model is very simple to understand and use which make it the choice to develop the project. Waterfall model have clear project objective and stable project requirement (Dr. Dobb, 2008). In waterfall model, there are 6 stages in order to develop the system. Those six stages are requirement analysis, system design, implementation, integration and testing, deployment and maintenance. Each stages description is described in the table below:

Stages	Description
Requirement Analysis	In this stages, we are required to identify the requirement and perform analysis before start develop the project/system. In order to identify the requirement, some research should be carried out. For this project, the best way to identify the requirement is to approach the person in charge of the booking system in each department. We have to interview them to collect the

	data we need such as what system currently in use and what is the advantages or disadvantages of the current system. After collect all the data, we have to do the analysis to identify the requirement that should be included in the system. By using the data collected, we have to identify the disadvantages of the current system and what is the user expected in the system.
System Design	After we do all the study in the stage 1, we will start the system design in this stage. We have to determine what function should be included in the system and who will be able to access the system. We have to determine the flow of the system and how it will be a good system. The system designed should be user friendly and achieve the goal of the project.
Implementation	In this stage, we will start to develop the system slowly part by part. This means we develop the system according to the function. Each function is not connected to the other which means it will not link to the other functions. Each function developed will be called as an unit which will be combined in the next stage. This process is to let us find the error easily.
Integration and Testing	All the function will be combined into a complex system. After the system is completed, we will run the alpha testing to test the functional of that system such as robustness and reliable of that system. It will be tested to find out if there is any error(s).

Deployment	After testing, we will release the final product into market. It will be exposed to the real user and have the feedback from the user. This stage is very important since the user will use the system and give comment.
Maintenance	This stage is to make sure the system in perfect condition. After we found error, we will fix it to ensure the system is in top condition.

Table 1.2 Description of stages in SDLC Waterfall Methodology

1.6 Significance of Project

The significance of this project is to develop a standardized system to manage the booking of related facility in the UNIMAS. People who use this system can easily book a room without the need to approach the person in charge. This online system make the user have a flexible time to do the booking. They can do the booking in weekend time.

Besides that, it also give benefits to the admin. It reduce the number of job of the admin since the admin can search for available time in the shortest time. Admin did not need to create and fill the timetable by manually and change it again by again to make the best timetable.

Since the booking system is centralized and standardized, user able to understand the booking process easier and reduce the error that possible. This can save a lot of time since we do not need to make the booking again and again.

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1.7 Expected Outcome

A developed online system which allowing students and lecturers/staff to make a booking for the room/hall facility of UNIMAS. By using this system, user able to check available time and date before choosing the most suitable slot. User does not need to keep on meeting the person in charge to discuss about the booking. User also can easily cancel the booking according to booking regulations. Admin can do their booking job faster and more effectively.

Chapter 2: Literature Review

2.1 Introduction

This chapter will discuss about the literature review for the booking system. Research will be carried out to get the overview of the booking system in UNIMAS. Recommended website features is defined after do researching to make sure all the required features are included in the website. Also, reservations algorithm is determined after perform some research and it will be the guide line to create the algorithm that will be used in the system. A few of similar existing online and manually booking/reservation system will be studied to create a suitable booking system. All the system that studied will be compared to the system that will be developed later to know what is the differences of the system.

2.2 Overview about the booking system in UNIMAS

Nowadays, everyone want to change/transform their booking system from manually to computerize. This mainly is due to the computerize system will make the job/work done more systematically, effectively and efficiently.

After doing some research in the UNIMAS, almost all the department using the manual booking method. In order to develop a suitable e-booking system, a review and analysis will be done to the current existing systems that are similar to the e-booking system.

The booking method using in the UNIMAS consists of two methods. One in using the manual-method and another one is using the existing online system. Most of them uses the manual

method, since they do not have a computerize system yet. The existing online system is not well accepted by all the department in UNIMAS, only one department using the system.

If using the manual method, they will record all the detail on the paper and keep it in a file. First, they will need to prepare a form for the requester to fill. After that, they will check the room facility and slot time that requested and respond to the requester again. If the time is suitable, they will update the available slot in the time table. All the checking and booking process is done manually. They have to check the time slot and respond to the requester. This make the person in charge busy in manage the booking. They kept all of the record by using a file or store it inside a file (excel file).

There is also some department using a computerize system. This system maybe is paid version or open source (free edition). If using the computerize system, they able to select the facility that they want to booking and also the time slot. After the requester submits their booking request, the admin will manually go through all the booking. Admin will decide whether the booking is acceptable or not. Then, the admin will respond to the requester either through call or email.

Also there is some department just using the software as a record purpose only. This means that the booking process still done manually, but the record is save in the computer. The software/system used is just for the purpose of record and interaction between the technician and person in charge. The person in charge just need to key in the booking request that is confirmed in the system. Then technician will able to view the booking record. So, they will know what time they need to setup/prepare the facility.

There is some similarities among all the booking system/method in the UNIMAS. Only the

person in charge can access the system which means that the student/requester do not have the right

to access the system. This means that, they have to manually contact the person in charge to book

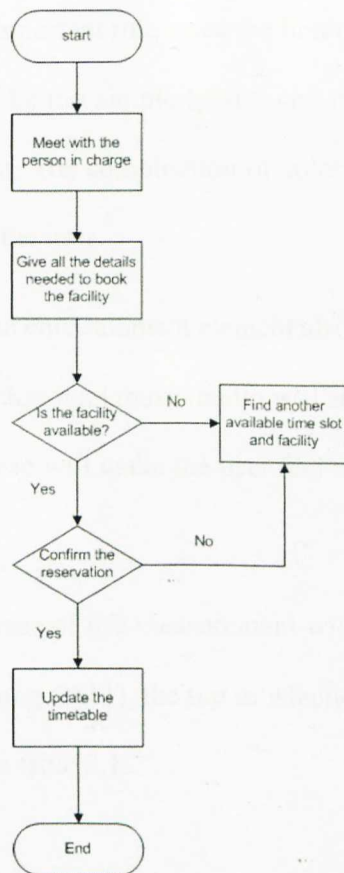the facility. Figure 2.1 show the general booking process that concluded after conducting research

in the UNIMAS.

Figure 2.1 General booking process for UNIMAS