

Pagoh Education Hub Shared Facilities Booking System: A Usefulness Survey

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Abstract

Pagoh Education Hub shared facilities are a place where many facilities are provided for students and staff from public higher education institutions in Pagoh Education Hub. The Ministry of Higher Education (MOHE) is responsible for processing booking approvals and keeping them recorded. The main issue with the current booking process is that bookers must go to the Ministry of Higher Education office in Pagoh Edu Hub to request and fill in the booking form within office hours. The purpose of this system is to provide a systematic recording system for booking information, develop an alternative booking service for booking Pagoh Edu Hub shared facilities, and evaluate the system's ease-of-use aspect. The methodology used for the development of this system is agile. This study conducted a feasibility survey among the bookers and discovered that the current booking process could be more efficient because the booking process needs to be done physically. The respondents agree that an online booking system should be created to simplify the booking process. Additionally, ease-of-use testing has been conducted using the USE Questionnaire with 33 students and one Pagoh Edu Hub staff to assess the system's ease of use. The recommendations for the system are creating an Android or IOS version to make it easier for bookers to access using mobile phones and providing information regarding equipment provided in each facility.

1. Introduction

There are many kinds of booking systems available from several software developers and businesses, and countless circumstances exist when they are required. Booking systems, including restaurants, hospitals, and even school exams, are available. Because every circumstance is unique, creating a solid booking system that functions for every situation, gadget, and business is challenging.

1.1 Problem Statement

The booking requests for provided facilities at Pagoh Education Hub (HPTP) are approved and recorded by the Ministry of Higher Education (MOHE) office in Pagoh Edu Hub. HPTP shared facilities are provided for students and staff from public higher education institutions in the Pagoh Education Hub. The process for booking shared facilities at Pagoh Edu Hub involves several procedures. Firstly, bookers must walk into the Pagoh Edu Hub office and meet with the designated staff responsible for managing facility bookings. Secondly, bookers must fill out the booking form provided by the KPT staff. Subsequently, the staff will review the booking information and

approve the booking if the facility is available. Lastly, the Pagoh Edu Hub staff will retain the approved booking form for record-keeping purposes. These procedures are carried out in person and require the physical presence of the booker. However, the Ministry of Higher Education needs a framework to enable the general public to reserve the facilities at Pagoh Edu Hub easily. In order to book any shared facility, the booker must walk into the Ministry of Higher Education office.

To date, finding the earlier booking information is time-consuming because the old technique employs a filing system to keep booking data for a long time. Consequently, the likelihood that booking information is corrupted is very high. Subsequently, upon booking, UTHM staff must fill out a booking form. The method of filling out the form has a high potential for the form to be lost. It will cause thousands of physical forms to be photocopied, submitted, sorted, searched, and stored, wasting paper, ink, power, space, money, time, and energy. Additionally, most bookers are fully occupied lecturers and students who are rarely available to make a facility reservation. Fig. 1 shows the steps to book a facility.

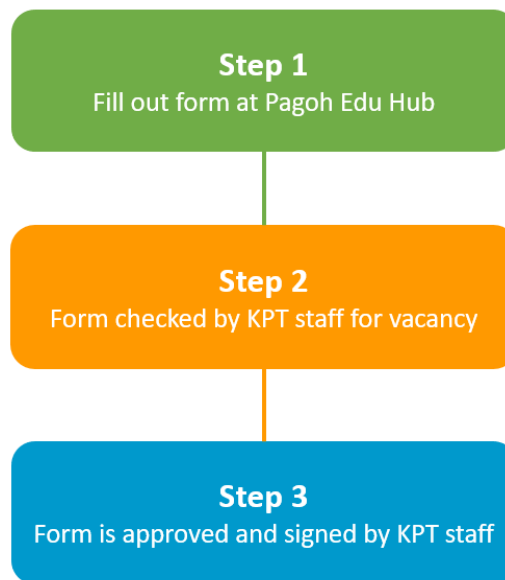


Fig. 1 Steps to book a facility

1.3 Objective

The objectives of this project are to provide a systematic recording system for booking information, develop an alternative booking service for booking Pagoh Edu Hub shared facilities, and evaluate the system's ease-of-use aspect. Pagoh EduHub SharedFac Booking System is developed for the students and staff from public higher education institutions in Pagoh Education Hub. The system provides an easy-to-use shared facility reservation system where users can book or cancel a facility reservation and get the booking approved via the online system. Subsequently, the system lets users reserve Pagoh Education Hub's resources. The conference center, auditorium hall, multipurpose hall, student activity center, and library space are among the facilities that can be reserved using this system. The Pagoh Education Hub's sporting facilities cannot be booked through this system due to the KPT's separate booking procedures.

2. Related Works

One of the factors that contributed to the transformation from traditional booking systems to online booking systems was the increasing importance of information quality [1]. Hotel websites convey accurate and comprehensive information to potential customers [2]. Factors such as the variety of web characteristics, connection to other sites, usefulness of content, visual appearance, and information on rates all contribute to the perceived quality of information. Additionally, the perceived interactivity of the website, which refers to the users' ability to modify the form and content of the website in real time, influences customers' perception of value and their level of trust in the online booking process [3]. Price and promotion strategies also significantly attract customers' attention and drive them to make online bookings. Ensuring the safety and privacy of customer information is another important consideration, as customers must share sensitive data during the online booking process [4]. Finally, the influence of electronic word of mouth (e-WOM), such as online reviews

and recommendations, cannot be underestimated, as positive feedback and reputation can significantly impact customers' intentions to book online.

Table 1 Comparison between Existing Online Booking and the Pagoh EduHub Sharedfac Booking

Comparison Criteria	GSC Online Ticket	Traveloka Online Booking	Malaysian Airline Online Ticket	Pagoh Edu Hub SharedFac Booking
Sorting Option	✓	✓	✓	✗
Rating	✓	✓	✓	✗
Favorite Product	✓	✓	✗	✗
Customer Reviews	✓	✓	✓	✗
Booking Service	✓	✓	✓	✓
Booking Status	✓	✓	✓	✓
Booking Cancellation	✗	✓	✓	✓

Table 1 compares existing online booking and the Pagoh Edu Hub Sharedfac Booking. GSC is a website that allows users to use their services, such as buying online movie tickets, booking a hall for events, and buying food and beverages. GSC is designed to provide sorting options for users to sort their preferences, like promotions, foods, and events. GSC's online ticketing system has its own database to store customer information for their use and facilitate the easier management of its online ticketing system. GSC website also has a rating feature where users can rate movies based on their opinions so other users can decide on the movie they want. GSC's website has customer reviews so that customers can give their feedback on the website. This feature can help GSC improve its website and increase customer service quality. GSC website can book all services such as booking a hall for the event, buying a movie ticket, and buying food and beverages. Booking status is available for users to see their current booking status on the GSC website. Users cannot cancel their booking due to GSC's no refund policy. GSC's online ticket system needs a sign-up form.

Traveloka's online booking system allows users to look for hotels or flight bookings online for their vacation. Traveloka's online booking system uses a database to store all of the website's data and has sorting options for users to pick flights or hotels based on their preferences. Traveloka's online booking system has ratings so that users can give ratings on the services provided by the website. Traveloka has a feature that allows users to save their favorite flights or hotels for future reference in case they want to book again. Users can view their booking status on the Traveloka website. On the Traveloka website, users can cancel their booking for a refund. Traveloka's website provides a sign-up form for users to sign up.

Malaysian Airline's online ticket system is a website where users can buy flight tickets. The system uses a database to store all data. Malaysia Airlines' online ticket system has a sorting feature so users can sort out their preferred types of tickets, like economy or first-class tickets. The website has a rating option so users can rate their experience while using the website. Malaysian Airline's online ticket system does not have a favorite product feature, so user cannot save their favorite products on the website. The website offers customer reviews so users can review based on services provided by the flight companies they chose for other users' reference. The website allows users to book all services. Users can view their booking status on the Malaysian Airlines website. Users can cancel their booking through the Malaysian Airlines website. The Malaysian Airlines website provides a sign-up form for users.

Pagoh Edu Hub SharedFac Booking is a system that allows users to book any facility inside Pagoh Edu Hub. Pagoh Edu Hub SharedFac Booking uses a database to store all booking data and does not have user sorting options. Pagoh Edu Hub SharedFac Booking does not have ratings, so users cannot give ratings on the system's services. Users can view their booking status in the Pagoh EduHub SharedFac Booking system and cancel their booking, and it provides a sign-up form for users to sign up.

3. Methodology

The methodology used to develop this system is agile because of its flexible, collaborative, and iterative development [5]. This process is divided into 5 phases: requirements, design, development, testing, and deployment. It works in short sprints that usually last for one or two weeks. Communication would be more accessible due to the small number of team members. Thus, this model is suitable because of the short timeline and few developers. Fig. 2 shows the agile software development cycle.

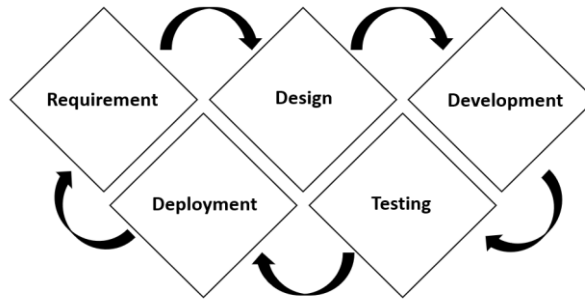


Fig. 2 Agile Software Development Life Cycle

In the requirements phase, issues are determined in the current system, and the requirements for the project are defined. An interview session was held with the KPT staff.

Table 2 Feasibility Survey Questions

Questionnaire Section	Question
System feasibility	1. You previously booked Pagoh Higher Education Hub Shared Facilities as a... 2. Do you find the current process to book a shared facility to be tedious? 3. Would you prefer to book a shared facility through an online booking system? 4. Based on your answer to the previous question, why?
System features	1. What features would you like the shared facilities online booking system to have? 2. What other features would you like to recommend shared facilities online booking system to have?

Table 2 lists the interview questions. The scope of the system is determined, and the entity relationship diagram would be constructed in this phase. In the requirements phase, issues are determined in the current system and define the requirements for the project. An interview session was held with the KPT staff. The scope of the system is determined, and the entity relationship diagram would be constructed in this phase. During the design phase, the system will be created based on the requirement and information that is acquired during the requirements phase. In the development phase, a web-based system will be developed based on requirements and the design phase.[6] The program code will be created according to plan in order to achieve the main objective of the web-based system development. Fig. 3 presents the user interface for list of booking.

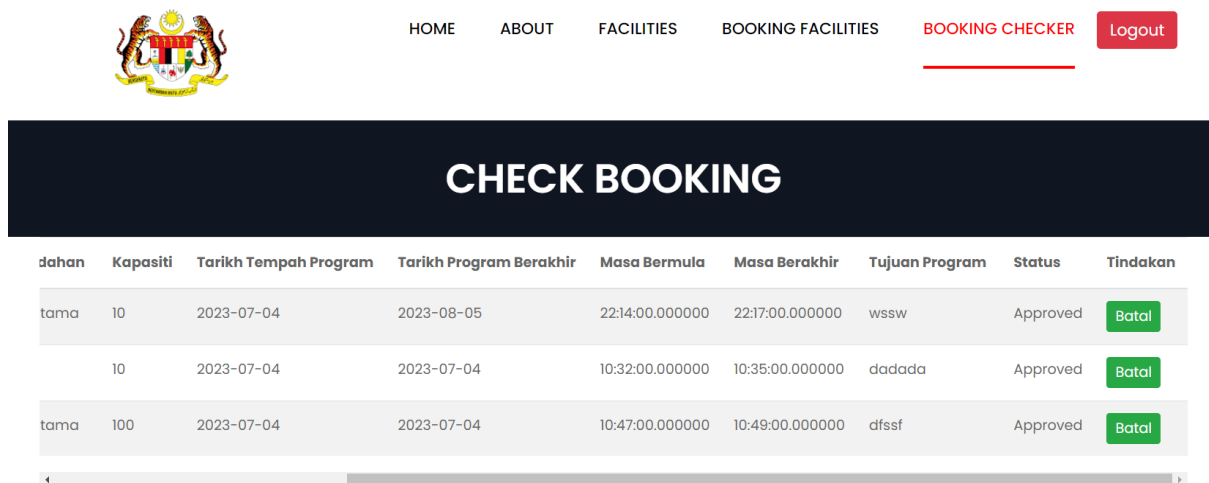


Fig. 3 Booker View of Booking List

Fig. 4 presents MOHE's view on the list of bookings for approval. The MOHE management is allowed to review bookings and eventually decide whether to approve, reject, or delete selected booking applications.

Booking List

Search by Nama...

Id Tempahan	Jenis Kemudahan	Kategori Kemudahan	Kapasiti	Tarikh Tempah Program	Tarikh Program Berakhir	Masa Bermula	Masa Berakhir	Tujuan Program	Status
1	Pusat Konvensyen	Ruang Dewan Utama	100	2023-07-09	2023-07-18	20:42:00.000000	20:41:00.000000	100	<input type="button" value="Approve"/> <input type="button" value="Reject"/> <input type="button" value="Delete"/>

Fig. 4 MOHE View of Booking Approval

In the testing phase, usability testing will be conducted to measure the usability of the system's user interface. The testing would be done by someone who booked Edu Hub Pagoh shared facilities before and a KPT staff as admin. Usability evaluation forms would be given to users to make evaluations. The survey was carried out using Google Forms, and the usability testing was done using the USE Questionnaire. The questionnaire will be handed out to a student as a booker, and another questionnaire will be handed out to a KPT staff as an admin. The 30 questions that respondents must respond to are broken up into four categories: usefulness, usability, ease of learning, and satisfaction.

4. Result and Discussion

Forty respondents were invited to participate in the feasibility survey; however, only 82.5% responded.

Table 3 Expected System Features

System Feature	n (Number of respondent)	% (Percentage of respondent)
Availability calendar	25	75.8
Booking confirmation and cancellation	25	75.8
Room image	14	42.4

Table 3 presents the expected system features based on respondent feedback. Following this, one MOHE staff member responsible for current facility booking management and 33 UTHM students participated in the system functionality testing. Fig. 5 illustrates the responses from the usefulness survey.

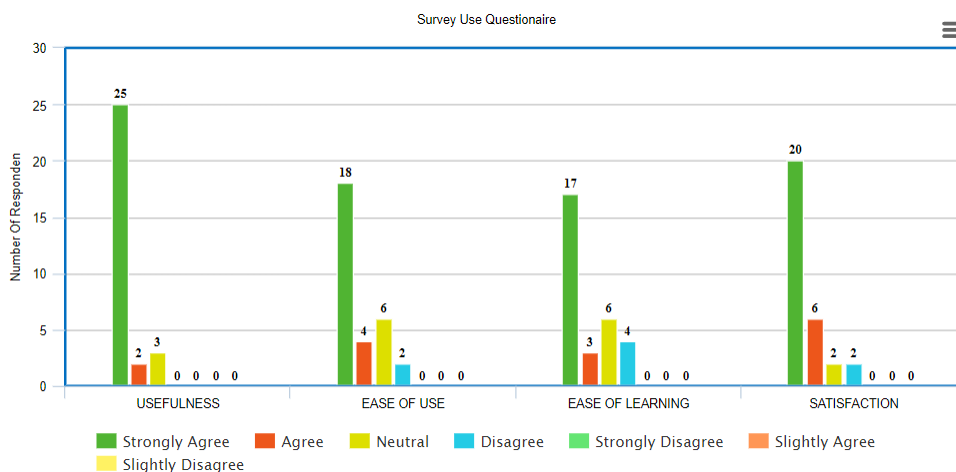


Fig. 5 Response of Usefulness Survey

The author employs a survey like the USE Questionnaire to determine how far along the system is. The author conducted a question-and-answer session through Google Forms to get feedback from students and academicians on how to develop this project, as shown below.

The respondents overwhelmingly agreed that this booking system should be developed for the convenience of the general public and the Ministry of Higher Education in the future. The assessment determines that the

Pagoh Edu Hub SharedFac Booking system was successful and complies with the Ministry of Higher Education requirements for rules and laws.

The Pagoh Edu Hub SharedFac Booking system's necessary features align with user preferences, according to the results of the USE Questionnaire survey. The survey's findings demonstrate how simple it is to use and understand the designed system.

5. Conclusion

This study developed the "Edu Hub Pagoh SharedFac Booking" system. This integrated platform enables students and staff in the Pagoh area to easily book shared facilities online, eliminating the need to visit the Pagoh Edu Hub office in person. Before development, a survey was conducted to gather the functional requirements for creating an efficient online booking system. The ease of use of the Edu Hub Pagoh SharedFac Booking system was evaluated using the USE Questionnaire, and the results indicated overwhelmingly positive feedback.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

*The authors confirm contribution to the paper as follows: **study conception and design:** Hazwani Rahmat, Mohamad Afiq Afnan Mazlan; **data collection:** Luqman Nul Hakim Abdul Aziz, Mohamad Afiq Afnan Mazlan, Mohamad Faris Helmi; **analysis and interpretation of results:** Mohamad Faris Helmi, Hazwani Rahmat; **draft manuscript preparation:** Luqman Nul Hakim Abdul Aziz, Hazwani Rahmat. All authors reviewed the results and approved the final version of the manuscript.*

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