e-VEHICLE BOOKING SYSTEM AT UMP

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ABSTRACT

Currently, vehicle booking system at University Malaysia Pahang (UMP) is done manually. Jabatan Hal Ehwal Pelajar & Alumni (JHEPA) provides the booking form, the applicant need to get the form from JHEPA office and Jabatan Pembangunan & Pengurusan Harta (JPPH) will manage the vehicle booking request made by the applicant. This manual process faced some problem such as use lots of time, space, paper, money and energy. Instead of the applicant difficult to choose suitable vehicle to request, they also have different type of handwriting that can cause misunderstand. JPPH also have conflict to manage the vehicle accurately, like when the paper is cut out or missing. The main aim e-Vehicle Booking at UMP is to help JPPH's management system and also the applicant, the process will be faster and use the web based easily. Some researches have been made to conclude about previous study on booking system include manual, online and mobile application. Software Development Life Cycle (SDLC) method is used from beginning to the end of development of this proposed system. Hopefully this system, with simple application and friendly-user interface will help the applicant in UMP and JPPH staff to do the vehicle booking process easily.

ABSTRAK

Pada waktu ini, sistem tempahan kenderaan di Universiti Malaysia Pahang (UMP) dilakukan secara manual. Jabatan Hal Ehwal Pelajar & Alumni (JHEPA) menyediakan borang tempahan, pemohon perlu mendapatkan borang dari pejabat JHEPA dan Jabatan Pembangunan & Pengurusan Harta (JPPH) akan menguruskan permintaan tempahan kenderaan yang diajukan oleh pemohon. Proses manual menghadapi beberapa masalah seperti banyak menggunakan masa, ruang, kertas, wang, dan tenaga. Kadang-kala pemohon sukar untuk memilih kenderaan sesuai dengan permintaan, mereka juga mempunyai pelbagai jenis tulisan tangan yang boleh menyebabkan salah faham. JPPH juga mempunyai konflik untuk menguruskan kenderaan secara tepat, seperti kemungkinan kertas terkoyak atau hilang. Tujuan utama e-Kenderaan Tempahan di UMP adalah untuk membantu sistem pengurusan JPPH dan juga pemohon, proses akan lebih cepat dan menggunakan asas web dengan mudah. Beberapa kajian telah dilakukan untuk membuat kesimpulan tentang kajian terdahulu berkaitan sistem tempahan termasuk aplikasi manual, atas talian dan telefon. Software Development Life Cycle (SDLC) digunakan dari awal sehingga akhir pembangunan sistem yang dicadangkan. Semoga sistem ini, dengan aplikasi sederhana dan antara muka yang ramah-pengguna akan membantu pemohon dalam UMP dan kakitangan JPPH untuk melakukan proses tempahan kenderaan dengan mudah.

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LIST OF SYMBOLS / ABBREVIATIONS / NOTATION / TERMINOLOGY

JPPH	Jabatan Pembangunan & Pengurusan Harta
JHEPA	Jabatan Hal Ehwal Pelajar & Akademik
UMP	Universiti Malaysia Pahang
SMS	Short Messaging System
GSM	Global System For Mobile Communication
2G	Second Generation
3G	Third Generation
SIM	Subscriber Identity Module
PHP	Personal Home Page / Hypertext Preprocessor
SQL	Structured Query Language
RDBMS	Relational Database Management System
SDLC	System Development Life Cycle
GUI	Graphical User Interface

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

System can be divided into two categories, manual and online. Manual means that you need to do the traditional process like fill in the booking form first before continue with other process. In the other hand, online system works with internet, so user who wants to use it must connect to the internet whether using wireless or through cable connection. As we know, online system is popular system recently. Many systems can be done through online such as transfer money and buy movie ticket.

University Malaysia Pahang (UMP) still uses manually on some system such as vehicle booking at Jabatan Pembangunan & Pengurusan Harta (JPPH) where the applicant who want to book the vehicle need to get the vehicle booking form from the Jabatan Hal Ehwal Pelajar & Alumni (JHEPA), fill in the vehicle booking form, and then continue with other procedure.

Instead of managing the booking request form manually, JPPH staff also responsible to manage the meeting with driver, organizes the timetable for each driver of vehicle in given time, top up card process and traffic summon record. [9]

The main aim of this project is, proposed and develops an online system of vehicle booking at UMP, so that the web based can help the applicant and JPPH staff. The applicant can use the system to book the vehicle, and then ask for approval from verifier staff directly without wait for long time.

By creating this vehicle booking system at JPPH, and JPPH as the administrator of the system, will help overcome the problem that encounter and also help to reduce the applicant's and JPPH management's burden over the manual process of current system.

Firstly the applicant need to login into the system using the default username and password. After that the applicant can view the homepage of the system, where they can change information about themselves if they want to. On the side of the homepage, the applicant can click on the option whether to view the vehicle booking history or to apply the vehicle by filling in the required information.

The Booking History option will show the applicant's name, vehicle type, vehicle quantity, start date and due date of booking, place to go, purpose of vehicle booking, number of passengers, verifier staff name, verifier staff phone number and status of application whether pending, approved or rejected. This option is for view only, and the applicant can view the entire request made by others applicant. And they also can download the passenger list name of each request.

The second option is Apply, where the applicant needs to fill in the required information such as vehicle information, pick-up and return information, place and passenger, driver information, and verifier staff.

In Vehicle Information, there are vehicle details such as type, capacity and availability, the applicant needs to enter the information such as vehicle type and quantity. In Pick-Up and Return Information, there are defaults today date and the applicant needs to fill in the pick-up date, pick-up time, return date, and return time. In Place and Passenger, the applicant needs to enter the place to go, purpose, passenger number and passenger list. In Driver Information, there are driver information such as name, phone number and email. And last but not least, there is important information that needs to be entering which are verifier staff name and phone number. Only one staff can be choosing for each request.

Then, after finish fills in the apply form and check if there are any errors, the applicant then will submit the form, and notify the verifier staff with the applicant's name that want the approval for transportation to the place to go.

The verifier staff need to login into 'dummy' website create by the system with the phone number and password that automatically create by the system that send in the SMS notification. The verifier staff will whether approved or rejects the apply form by click on the option given after they log in to the 'dummy' website. Then the default status of the application will automatically change from Pending to Approved or Rejected. If the Apply form was Approved, then the availability of vehicle that is choose by applicant will automatically decreased.

For JPPH staff as the administrator, they will log in to admin page and view all request made by applicant. In all request form there are information about applicant's name, vehicle type and quantity, start date and due date of vehicle booking, place to go, purpose of vehicle booking, number of passengers, passenger list name, verifier staff name, verifier staff phone number and status of application. If there any new request, they can view the application details and notify the applicator about the approval or rejection of the request using SMS notification.

There are also option to Update Vehicle and Update Driver. This system have manually update the information about vehicle and driver because sometimes the vehicle is return late or the driver is not attend on the request date because of some emergency case.

Last but not least, in term of safety and privacy of the data, this system also has a good security. The security and safety is where there are only applicant that request the vehicle, the verifier staff and JPPH staff that organize the vehicle booking form can view the apply form, so there will no disturb or being hacked from others.

1.2 Problem Statement

Currently this vehicle booking system at UMP is done manually system, where the applicant need to get the booking form from JHEPA office then fill in the vehicle booking form by handwriting, after that they need to get the approval from the verifier staff, then they need to send the booking form to the JPPH office for next process.

This process will use lots of time, space, paper, money and energy. The reason why this system took lots of time is because the student or applicant needs to fill the booking form early, before wait for the verifier staff to approve the booking form. As we know, the booking form need to submit to the JPPH a week early for nearby activity and two weeks earlier if the activity is out of the country, so that its easily for the JPPH staff to organize the use of vehicle in time and manage all the request systematically without having problem. In addition, if the one who request the vehicle is a student, the process will reduce the student's time to study as they lack of time.

Sometimes the applicant that want to booked the vehicle faced difficulty of choosing the suitable vehicle, then they will choose spontaneous and sometimes realise that they have made a wrong choice after JPPH made the arrangement. This situation can make the usage of the vehicle become messy and improper where the number of passenger wills not suitable with the vehicle chosen.

This also very not proper system to use, because as we know, each person had different type of handwriting, and this manual system need to fill by handwriting. Sometimes, we can not read some handwriting, so that this will cause problem on managing the booking vehicle, and if we misunderstand the handwriting like number of passengers.

The booking form that had been submits to JPPH for sure need to save and keep on the rack. So that this procedure will need large space to keep the record for further needed. JPPH also have problem to manage the vehicle accurately, like when the paper is cut out or missing.

1.3 Study Objectives

The objectives of this study that are to be achieved at the end of the project are:

a) To develop an efficient vehicle booking system at UMP with SMS notification of approval.

1.4 Scope of Studies

To develop the system, the scopes of the project are needed to be identified in order to guide the development process and to ensure the project is a success.

The identified scopes for this project are:

a) Applicant

Student or staffs of UMP who want to apply the vehicle for official use that can log in to the system using default username and password given, view the vehicle and driver information, fill in the booking form with complete details, request for approval from verifier staff by sends SMS notification via the system. The other function is they can view their booking history.

b) Administrator

JPPH staff as the administrator that can log in to the system using default username and password given, update the available driver and vehicle details, view all request by the applicant and notify the applicant about the arrangement and changes of the application by SMS.

c) Verifier staff

Verifier staffs that get the SMS notification from the applicant that need to approved or reject the request form by view the SMS details.

1.5 Thesis Organization

This thesis consists of six chapters. Chapter 1 is Introduction where the brief descriptions about the entire project including the problem statements that occur, objectives and scopes of study are stated. Chapter 2 is Literature Review that can be defined as the collected research to gives the complete explanations about the research of the project. The current system is about the research such as the method, device and technology system that are used. Chapter 3 is Methodology defined as overall work flow of project development using System Development Life Cycle and details about Hardware like is laptop, keyboard, mouse and pen and Software like XAMPP and Adobe Dreamweaver CS3 used to develop the system. Chapter 4 is Implementation that focuses on to document the design of the project system, and combination of all processes that involve in developing the system. Chapter 5 is Result and Discussion. This chapter describe on output from the testing result, advantages and disadvantages of the system, constraints in completing the project and assumption for future development of the system. Chapter 6 is Conclusion which concludes all the research, development of the project from the beginning to the end of thesis.

1.6 Conclusion

As a conclusion, the scope of this project will act as the basis to the system development generally. The system can provide many benefits in many ways to UMP and the most important thing is that the objective of the project must be fulfilled to ensure the development of the system is an achievement.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter will briefly explain about research related to the e-Vehicle Booking System at University Malaysia Pahang (UMP). A literature review can best defined as a piece of discursive prose and there are much information regarding this system which is vehicle booking system using online method that can easily be found and search through the internet and also in the journals, paper works and books.

Some of these findings from the previous research that have done by other student or project that already exist in the practical world will be discussed in this chapter. Besides that, the problem occurred at each findings of the research will be fixed by this project. [1]

2.2 Introduction to e-Vehicle Booking System at UMP

The e-Vehicle Booking System at UMP is developing to help Jabatan Pembangunan & Pengurusan Harta (JPPH) staff to manage the vehicle booking request and also to notify the applicant, about the status of approval whether they application is approved or rejected. This system also help the applicant consists of student and staff at UMP for booking the vehicle provided by university for formal activity use by using online system. Jabatan Hal Ehwal Pelajar & Alumni (JHEPA) as the form provider also less burden if this system is use.

Using this system, all of the process of booking will be done easily, and have less problem faces by the user, systematically manageable system and environmental-friendly application as this system is use zero paper to do the process. The e-Vehicle Booking System also saves lots of time, money, energy and space.

Currently at UMP this system is done manually by filling the booking form and need to continue with other process and must be follow the general term that provided by JPPH.

This traditional process will be replaced by this proposed online booking system that can help and reduce the JPPH's management system burden instead of manual system. Even though the method is change but still using the same old general term of use in order to make the system run smoothly.

SMS notification is introduced, as the technology is more reliable, easy and fast to use. The applicant and JPPH staff who can use this new function.

2.3 Overview of the Current System

2.3.1 Manual System - Capricornia Car Pool System

The Capricornia Car Pool System at the end of 2006 had thirty car pool vehicles located across the central Queensland campuses of Bundaberg, Gladstone, Mackay and Rockhampton. [2]

The focus of this research is the Central Queensland University (CQU) vehicle fleet management which is managed by facilities management division, included car pool vehicles, faculty and division vehicles and salary vehicles.

The subject of this research is clerk in the facilities management division, who provides cars and also manages the bookings.

The procedure used is manual. The clerk utilizes a diary and note pad procedure to conduct customer bookings process. Request of car can be made by directly face-to-face or by send an email by who want to book the car.

The advantages of this system are the clerks can directly discuss with the customers if there any problem related to the vehicle. As it is the traditional method of recording information, so no training costs are needed.

The disadvantage of this system involves a lot of manual labor with the clerk of the facilities management division as the main contact. When the clerk is away from his and the receptionist takes messages and leaves it on the clerk's desk, sometimes these messages are lost, or go missing.

This manual system also create problems such as transcription error, copying information from one source to another may allow possible errors to occur in important information.

This traditional manual method also slows down the process of booking a pool car vehicle as the clerk is not always aware of the location of all the car pool vehicles and can not confirm a booking for several days as the records are checked to locate all available vehicles.

At times it can take several days for a booking to be processed. Forms and permits are lost and need to be requested again, each month a number of bookings are lost or misplaced.

There are also a numbers of problem related with the operating a diary as a main data store including no statistics available. Management is unable to identify if more vehicles are needed or there are too many vehicles.

Only the clerk has an idea of the level of usage. It is difficult to track the vehicle maintenance and the clerk has to check the cars when they return from been used by customers.

To improve the management system of Capricornia Car Pool System, there are some recommendation such as a need for create software that can take and save all information online. And the information can be tracked by the person who needs to make a booking or by the booking clerk who has to finalize the booking and by the management so that they can ask for increase in the fleet when needed.