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Ezzy Car Rental : A Solution for Online Car Rental Services

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Abstract: Ezzy Car Rental run their daily operation manually without any management system. A study is conducted to study their business operation and work process flow. Result of the study is used to gather system requirement suit with company business. Therefore, an online car rental management system has been developed using PHP as programming language and MYSQL as database. This system has 2 main modules for potential client and administration. The objectives of project to upscale the rental car business and the same time provide good customer experience. A customer survey about online reservation system has been done. From the survey, 90% of respondent agree that the design and interface of online system is interactive and user friendly and 83% of respondent agrees that the performance of system is important which the system was capable to booking a car and get a status of booking directly.

Keywords: System Development, Online Car Rental

1. Introduction

Ezzy Car Rental is a company located at Taman Universiti, Parit Raja, Batu Pahat, Johor and business is manually documented without any supporting system. Ezzy Car Rental often faces various problems that may be able to affect its business. The customer are required to contact the company either to make reservation or manage their booking. The worker needs to check manually in the ledger book to verify the transaction and customer need to full their information manually at the office before take the car. After time of rental is over, the customer needs to return the car to their place and make a payment.

Literally, the process is a bit unorganised since the customer information is keep in the booking form and what happen if the booking form is missing? The problems that occur are that the user information record is not organized properly. This can cause information records to be lost and difficult to find in the event of an emergency. When running business manually without a system, Ezzy Car

Rental needs the large number of employees to manage various jobs. With digitalization, the number of employees can be reduced.

Next, Ezzy Car Rental is not widely not known by the public due to lack of advertising. So, to attract the interest of the public, Ezzy Car Rental have to make promotions. Promotion can be easy to done either at the system or with promotion at media social such as Instagram, Facebook or even messenger like whatsapp or telegram. Ezzy Car Rental able to update new announcement or discount to public with creative message with linked.

Study and survey have been done with Ezzy Car Rental to resolve this problem. Based on result of the survey, 90% of respondent agree that the design and interface of online system is interactive and user friendly and 83% of respondent agrees that the performance of system is important which the system was capable to booking a car and get a status of booking directly. Then, the system requirement is gathered suit with the business model and Ezzy Car Rental has been developed. After the system is completed and launch, customer able to do and manage booking of the car and administration able to verify, confirm and customer booking using the system. Customer will be immediately notified once the booking is confirmed. Company able to minimize number of staff since the Easy Car Rental able automize all the previous manual task.

Table 1: Comparison between Online System and Manual System for Car Rental Services

Online System	Manual System
A structured data storage system, usually in electronic form, a set of related data shared by various user categories to meet the needs and needs of an organization [1].	Existing system used by manual storage [1].
Data stored at server. Data are secure with data backup.	Manual data in the ledger book. Data is prone to lost.
Customer information is well managed.	Doesn't have customer information data. Relying on day to day operation.
Data Security	Data insecure. Anybody can tempert the data in the log book

Human mistake can be avoided by implementing the system. Once completed, functional test has been done to ensure all the requirement is fulfill. After pass the test, acceptance test has been done with company to ensure the system working as per user requirement. With having the system, time and cost can be saved.

2. Methodology

In order to develop a rental car system, the WATERFALL design model has been choosen to adapted. Figure 1 shows the model used in this project. This model is an instruction design model that often becomes the basis for other instruction design models. The WATERFALL method is called the classic life cycle, describes a systematic and sequential approach to software development, starting with the specification of user requirements and then the phase requirements analysis, phase design, phase implementation, phase testing and phase maintenance.
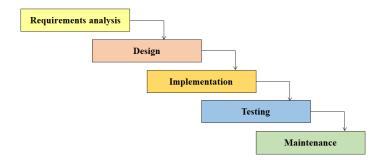
Figure 1: Waterfall Design Model

In phase requirement analysis, the project requirement and the target users has been analysed to ensure the development of a system more systematic and efficient. The developer will collect the data and information to covering the entire project that will be develop. A survey has been conducted among UTHM student and staff to find that consumers prefer to book by filling out information forms online because this is easier and faster than booking manually using the information form in writing.

The design phase is implemented after the requirement analysis process completed. This phase explains the overall view of design, structure, teaching approach, learning theory, media type and technology involved. The developer illustrates a mock up that describes overall system by using a html as a guide to produce an effective system.
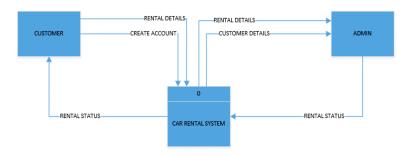

Figure 2: DFD of System Car Rental

At implementation stage, the system was developed in a small program that called unit and will combine to the next level. Each unit is developed and tested for a specific function. In testing phase, all units is developed in the implementation phase are included in the system after be tested unit by unit. Then, the unit will be combined as a system and tested for error checking.

This phase is the last phase in the WATERFALL model. Once the system is combined, then the developers need to do a system maintenance. The maintenance phase includes correction of an error caused by the developers. The developers need to enhance the system performance and improved system services as the requirements

3. Results and Discussion

Ezzy Car Rental system is one of the systems used by users to rent a car as such a system can facilitate the business of users to rent a car. In addition, with the development of this system, Ezzy Car Rental company able to manage and store information of tenants or customers in a more organized and systematic. The design results developed have different interfaces and have navigation buttons that are able to interact with the user. The user-friendly interface can also to some extent facilitate users to use this system.
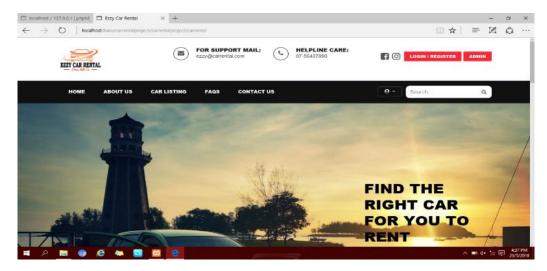
Figure 3: Homepage of the system

User are required to go homepage of the system. At the top of homepage, there are logos, email addresses, phone numbers, icons for facebook and Instagram pages, as well as there is a register / login button and admin button. At the bottom, there is a home button for users to return to the front page, there is also a button about us for the user's knowledge of Ezzy Car Rental, as well as a vehicle list button for users to choose a vehicle for rent. Next to the vehicle list button there is also the FAQS (Frequently Ask Question) button and also the contact us button to make it easier for users to find the address and phone number.

For first time user, customer is required to register via easy and simple registration form before able to login and make a car rental. After create an account, user need to login by using email and password. If they forgot their password, they can change their password by click on forgot password.

Customer able to view the lists of cars provided by Ezzy Car Rental for rent as shown in Figure 4(a). In addition, it also displays the rental price for an hour. Customer easier to plan their rental based this information. The search view as shown in Figure 4(b) can be used to search based on customer search criteria. In the search result summary information of the car has been displayed.
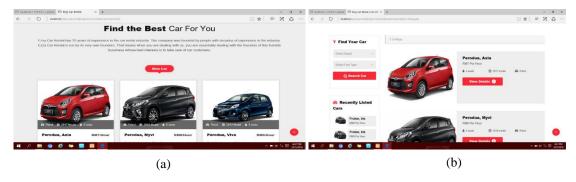

(a)   (b)

Figure 4(a): The list of available car in the system: (a) general and (b) search list

To rent the car, the user needs to click on the car listing at the menu bars and choose car model that they want to booking by click on the view details. Then, user able to view the details of car including the photo of the car and details specification of car. If the user satisfied, booking can be done via the booking form as shown in Figure 5.
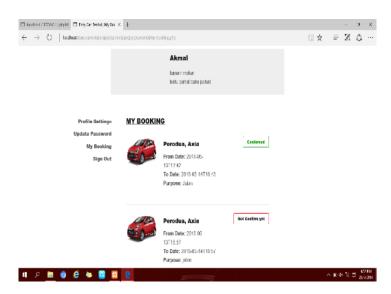
Figure 5: My Booking Tab

After completed, customer will directly to homepage. Ezzy Car Rental will verify the booking for next action. If customer want to view status of the booking, customers are required to clicks on My Booking tab. In here, customer able to see the status of the booking either approved approved (Confirmed) or not (Not Confirm Yet). On the left side of this display there is also a button to edit the user profile (Profile Settings), change the password (Update Password), booking information (My Booking) and check-out (Sign Out).

Figure 6 is the homepage view for the Ezzy Car Rental administration panel. In this display, Ezzy Car Rental can find the number of registered users, the list of vehicles, the number of bookings and the list of car brand. If Ezzy Car Rental wants to add vehicle brands or improve existing information, Ezzy Car Rental needs to click on the brands on the left side of this display. If the administrator wants to add a vehicle brand, Ezzy Car Rental should click on add brand and if administrator want to improve the existing brand information, administrator should click on brand management.
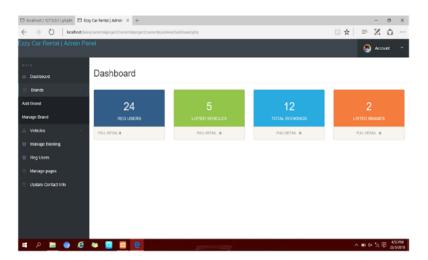

Figure 6: Ezzy Car Rental Administration Homepage

Figure 7 shows the customer feedback survey has been done to selected user to determine overall performance of the system. The survey is divided to three component which is system usability, system credibility and appearance. A few set of question is given to evaluate the performance. Most of customer provide positive feedback. 90% of customer agree that this system having clear purpose and able to

make booking with ease. 90% of customer also agree that this system is interactive and they able to quick search the item needed.
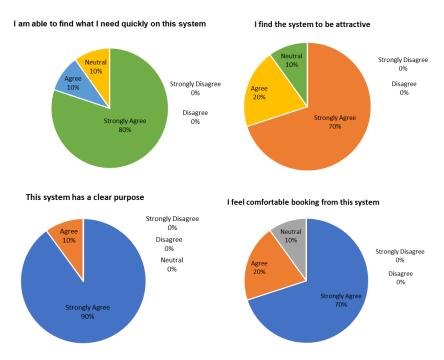

Figure 7: Questionnaire Survey Result for system

4. Conclusion

This system is crucial for Ezzy Car Rental since it transform their business model from manual booking request to systematically car rental request. Besides, they are able to expand their business via online because their customers are not only student or staff from UTHM while they also can get customers from other such as tourist. The system has a quick response time which is one of the benefits to Ezzy Car Rental. It is also easier to use, just fill in a form and it will process automatically by the system. Ezzy Car Rental also can save their time by having a systematically booking request. They also can do a marketing an example a discount on any booking which is more than 1 day. So, we can see the Ezzy Car Rental is getting many benefits from online management system.

Acknowledgement

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