Enhancing the Vehicle Reservation for Decision Making

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ABSTRACT – The conventional approach required the admin or even the staff to enter the record manually which is not environmental friendly by consuming big portion of papers. Moreover, the admin or even the staff would have to spend a considerable amount of time in order to locate the relevant maintenance record. The conventional approach of keeping data manually via paper based approach is also having the risks to have data redundancy, and to the worst extend, the data might be loss or stolen leaving no way to track the previous records. This objectives of this project are to design and develop vehicle reservation system that ease the information tracking of student, driver, and bus destination, also to evaluate the usability and user experience upon the usage of bus reservation system.

1. INTRODUCTION

In this globalization era, many organizations and industries have adopted the method to keeping records electronically in order to automate business process as well as to prevent data loss. The conventional approach required the admin or even the staff to enter data manually via paper based approach which is time consuming and poses the risks to have data redundancy, data stolen and most of the time, the loss of data. In order to overcome the conventional approach, a vehicle reservation system is developed to automate the bus booking process. The development of this system is needed to improve the data integrity, data redundancy, security, automate manual process and to speed up the booking process. The information of the drivers and passengers are available to be viewed and edited by the respective admin and staff. Moreover, this system aims to build a good management tool which is capable to speed up the data recording and data maintenance process. The management tool offers the capabilities to track information of the allocated drivers and bus destinations easily in a timely manner.

In addition to this, the staff and admin are able to insert any new information pertaining the bus destinations and driver information to the system. Furthermore, the system is also capable to offer the data maintenance by providing the capabilities to update or maintain the bus destination, duration, and information of the bus and drivers. The system also allowed deletion of the bus or information which is not needed and obsolete. Apart of this, in order to provide fast and accurate information, the system is built with the searching tool to search for the information of bus, driver or passenger by using keyword. In order to enhance and speed up the booking process, the information such as the bus distance is able to sort accordingly. Last but not least, the system is able to perform analysis as well as calculation on the bus duration of the distance easily. The graph is also automatically generated based on the total mileages to enable the admin to easily select drivers with least mileage. The system is specifically designed for UTeM transportation department which deal with students to assist the bus booking process.

2. METHODOLOGY

2.1 Admin and staff have to manually perform record keeping.

The conventional approach required the admin or even the staff to enter data manually via paper based approach which is time consuming. The admin and staff have to spend considerable amount of time to manage the booking schedule by using pen and paper approach. This system overcome the conventional approach by keeping the record electronically.

2.2 Manually check calendar after user performed reservation.

The existing system is not capable to disable the past date. For instance, the user is allowed to select any past date to perform and booking or reservation. The system is improved by integrating the calendar option to select the date of the reservation. The past date is disable to notify users that past reservations can no longer be made. This ensure the system is more secure and reliable.

2.3. No platform to keep track bus record activities.

The existing system do not provide the capabilities to keep track of the bus activities. For instance, the bus destination, the allocated drivers as well as the bus routes. As the record log is not available, the admin faced the challenges to keep track of the desired information. The system is further improved by including the activities logs of the reservations for future references.

2.4 Data redundancy, data insecurity and data loss.

The conventional approach required the admin or even the staff to enter data manually via paper based approach which poses the risks to have data redundancy, data stolen and most of the time, the loss of data. The system is improved to prevent data redundancy, ensure data integrity and security

besides speeding up the booking process.

2.5 Prone to errors and mistakes.
The manual approach required the manpower to calculate the total amount and perform data analysis. As human tends to make mistakes, the results of the analysis might not be accurate. This system is further enhanced to enable the admin to perform analysis as well as calculation on the bus duration of the distance easily. The graph is generated automatically based on the total mileages to enable the admin to easily select drivers with least mileage.

This project is developed using the flow as in Figure 1.

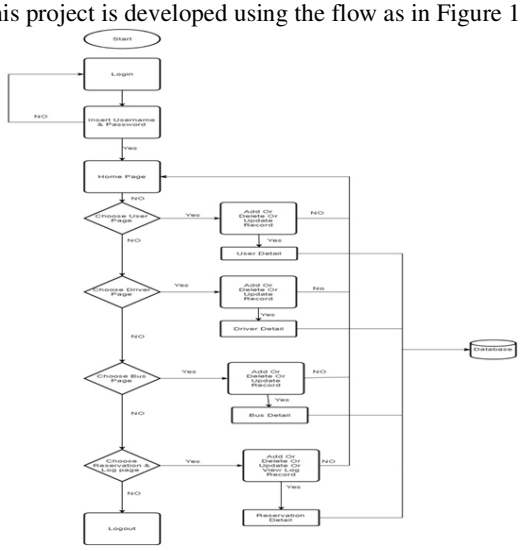

Figure 1: The method used to developed the system

3. RESULTS AND DISCUSSION

The results show that some decision making can be done by using this system. For example in Figure 2 below, the graph showing the total kilometers experienced by each vehicle for a period of time. This can help the organization to predict the maintenance period and make necessary schedule arrangement.

Figure 2: A sample of report

4. CONCLUSIONS

The system is able to perform analysis as well as calculation on the bus duration of the distance easily. The graph is also automatically generated based on the total mileages to enable the admin to easily select drivers with least mileage.

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