Online Car Rental System

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Abstract

The greatest motivation behind this research is that the requisite to explore the growing popularity of web based system technology. That's utilized by the industries to expand their services to customers this document has explained a notification based content alert for the rental systems of car so as to attenuate of consumption and time , which is favourable for letting agencies and consumers.

Consequently this technique was designed automatically to sent alert SMS to consumer about the provision of restrained car. This technique is developed supported the system Life Cycle (SDLC) using the waterfall model as a technique. A user acceptance test was classified into three parts including user acceptance design, usability, case of use, include utility and alert system functions.

Keywords

Car Rental System, Vehicle On Lease , Car Agencies , SMS Alert Notification , Car On Rent , Web-Based Car Rental System, Rental Cars Near me

Introduction

Car rental agencies are private organisations that provide vehicles on lease for brief period of your time to their customers together with an appropriate and affordable fee. Hire car service becomes the favourable option for many of the people, specially among the scholars on campus and still as universities. Because not all of the scholars can able to keep their vehicles and university bus company doesn't always help. Additionally, increasing taxi fares and irregular bus arrivals , discourage people from taking transport. Therefore car rental system are going to be good option for all kind of customer.

Now a days, such a large amount of organizations used a web-based system, which might be integrated with SMS technology as the general public often used mobile phones that facilitate users who are at home with SMS technology. Many revolutionaries have changed from manual to online systems, particularly the categories of workflows and resources that are stored in rent-a-car services. It's estimated to own changed from a conventional letting system to a digital system. Additionally, at the tip of 2006, the overall number of rental companies worldwide is over six thousand and within the year 2013, data showed that about 2 million cars within the United State Were rented. Currently hired services are offered on the premise of manual work, which involves lots of your time and also increases the specified resources as different resources are required for every process. Also, the user must go manually center should first contact the lease company for the wish vehicle. Therefore, integrated online lease system with SMS notification was provided and supported the customer for reservation, help management to understand the rental car list in a very specified time and about the provision of reserved car Inform customers, who support satisfactory service, support the operational processes of the customer.

With the increasing popularity of mobile phones and SMS, technology should be seriously considered as most of the people have high usage of mobile technologies. It becomes the necessity of the generation because it makes the work faster and hazel free. The challenge are going to be to see the character of services that you-drive agencies must deliver via SMS and to return up with solutions to their various challenge
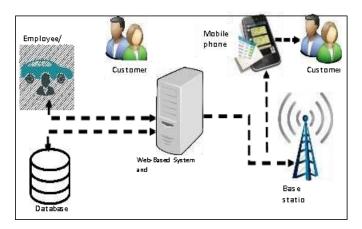
itinerant technologies to make sure satisfactory services for his or her customers at the present . additionally, many u-drive agencies are still using traditional methods by manually informing the customer using phone calling. Therefore, it's considered to be time consuming and worst case, the customer isn't informed at the proper time. There's no automation system for many of the lease agencies inform the customer to return the car and take a car reservation if available. Therefore, with this in mind, the service of lease agencies is enhanced through the event of an integrated web-based system with SMS notification to simplify it for purchasers.

Methodology

The web-based car rental system integrated with SMS technology has a very user-friendly interface. By using this system, employees can manage bookings, payment, vehicle issues and SMS notification to the customers within a few clicks only. The new data can be added or an existed data can be edited or deleted too by administrators. Thus, there is no delay in the availability of any information, whether needed, can be captured very quickly and easily. For security purposes, all customers need to create a new account before logging in or he/she can log into the system with his/her created account before they can make a reservation for a car. Then, the customer will be notified the availability of the car reserved through SMS. This system becomes very helpful for employees, administrator and customers. Figure 1 shows the car rental system architecture for the proposed system.

The Software Development Life Cycle (SDLC) was used to develop the web-based system and SMS notification. SDLC is a context that defines all activities and methods in a software development project. The process is linked with the waterfall model which contained of five points such as planning, analysis, design, development, and evaluation.

i. Planning.

In planning, we have collected data, problems and all information about the project which is gathered form journal, article and previous research. the gathered information is, opportunities and all the information were recognized. The aim is finding the core problems and limitation of the current car rental system to express goals of the breakdown structure and the system development is concentrate on the online car rental system and SMS technology.

ii. Analysis.

In analysis, we are looking for difficulties in the current car rental system, car rental data processing, car rental procedures and Analyzed the recent car rental system management roadmap. Apart from the activities which involves the identification of the software and hardware requirement in the scope of project, development system, schedule of activities such as chart (Gantt) and the total costing.

iii. Design.

In Design, the researcher designed the condition needed in system development. Data flow diagram, system architecture, entity relationship diagram, system components, contextual diagram, user interface design and system flow diagram are needed.

iv. Development

The web-based development formed the design of borders for using HTML and PHP coding through Adobe.

MySQL is used for the database and PHP language is used to perform the system, although Apache runs as a web server software using Xampp package. Then, SMS Gateway script by iSMS was fixed in the web- based to make the system able to send the message to the customer"s mobile phone.

v. Evaluation

In evaluation, in this phase the researcher was adjusting and testing of the program for fixing bugs or mistakes of the design. The blunder is a necessary testing to discover the errors that may happen in the error analysis program, logic error and language error. formerly, the system was assessed to control the system performance and confirm to all condition proficient. The researcher receipt testing was done by testing the system on users, to confirm that researchers can execute the tasks respectively.

In the development SMS system, the researcher was used mobile phone and SMS gateways, which are linked to the web-based system. the system is sending the alert message routinely to the customers about the accessibility and the status of the customers" car reservation and The SMS gateways helped as the gateway to connect with the mobile phone users. The mobile phone was used for alert messages and receiving the text messages about the booking status from the system.

In order to evaluate the effectiveness of the system, user acceptance testing was conducted. The system was tested and conducted to the targeted respondents. A quantitative method was taken, a survey form was the data collection device for this study. There was total thirty (30) survey forms were distributed and received for the investigation. The form involved in three (3) parts. The first part was containing the user interface design. The second part form is considering the usability, usefulness and affluence routine, while the third part, estimate the SMS alert function. The data were analysed using arithmetic mean system based on the ranking score value.
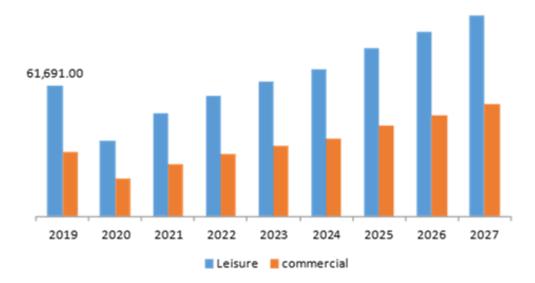
Research Results

The user acceptance testing on the Web based system, the study was tested from thirty respondents. This study show us the effectiveness of the system which contains 17 questions overall and divided in 3 parts respectively. The score value range from 1 to 5 ranked for every criteria.Eaxh Scale represents from strongly disagree(1), disagree(2), average(3), agree(4) and strongly agree(5).

Table 1: Describing mean effectiveness from respondents of the system

No.	Criteria	Score (1-5)					Mean
		1	2	3	4	5	
User interface design							
1	The characters of the system are easy to read.			2	9	19	4.57
2	The terms used in the system are consistence.			3	18	9	4.20
3	The interface of the system is pleasurable.			5	15	10	4.17
4	I like the interface of this system.			5	15	10	4.17
5	Message displaying error of the system is helpful.			2	14	14	4.40
6	Performing tasks in this system is clear.				13	17	4.57
					TOTAL MEAN		4.35
Usefulness, ease of use and usability							
7	Using the system helps me to rent faster.		1		9	20	4.60
8	Using the system saves my time.			2	10	18	4.53
9	This system is easy to use.			1	12	17	4.53
10	I am satisfied when using this system.			2	12	16	4.47
11	I am comfortable using the system.			3	12	15	4.40
12	It is easy to find information needed in the system.		1	5	12	12	4.17
13	The system has all functions and capabilities I want.	1	5	13	11		4.13
14	I found various functions in the system were working well.		3	17	10		4.23
				TOTAL MEAN			4.38
SMS alert function							
15	The SMS alert system used in the system is appropriate and relevant.		1	14	15		4.47
16	I found that the SMS notification system is helpful to the users.		1	16	13		4.40
17	Overall, I am satisfied with this system.		1	13	16		4.50
				TOTAL MEAN			4.46

To check the effectiveness of the system, the study was successfully done for each type of the criteria. Table One show the results for the identified criteria. The mean for each and every question and total mean for each categories was calculated respectively. The overall results shown that users were satisfied with the system, and it can easily help them completed their work easier and faster. The total mean achieved for the criteria was calculated as the highest 4.46 for the SMS alert function. Most participants were seen to be satisfied with the system as each of the question categories grades were above 4.0.

Conclusion

This paper showed some insight on user technology to construct and integration of web-based system with sms technology to enhance the service provided by the car rental agencies. This system will help the workers to notify the customers through SMS system by sending a message to alert the customers about the availability of the car reserved, Booking status and Rental charges. Thus, the system provides a convenient way of alert through the use of mobile phone as it is the most common personal communication mode for most of the people. Besides, this system is most effectiveand effecient for car booking,Car information and quickly rent a car.

User acceptance testing was conducted to evaluate the performance and effectiveness of the system by using questionnaire method. On the Basis of results and analysis, the overall system was measured to be acceptance by the users. The system functions are well-functioned from the testing sessions and most of the respondents were satisfied with the system.

In conclusion, The combination of web-based and SMS technology in the car rental agencies is the best and convenient way to take the advantages of today technology to enhance the productivity and efficiency of organization. In reality, SMS has been accepted by many users and has in fact, become extremely used. Apart from their limitations mobile phones have become a part of the everyday life of a enormous number of people, especially in the youth growing up with computing and Internet technologies.

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