To Develop and Implement an Online Vehicle Rental System

Dr. Mahendra Makeshwar[1], Kirti Adikane[2], Mansi Sangole[3], JivikaGotmare[4], Shreya Hedaoo[5]

[1]Assistant Professor, [2,3,4,5]UG Students
Department of Information Technology, Nagpur Institute of Technology, Nagpur, India,441501

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Abstract -Renting a vehicle assists people to get around even when they do not have access to their vehicles or don't own a vehicle at all. The Online Vehicle Rental System is being developed to be accessed by the users and the vehicle rental companies who want to rent out their vehicles or specializing in renting vehicles such as vans, trucks, cars, travels or bus, motorcycles, scooters, bicycles, cycle-rickshaw, etc. to the customers for a short period time for a fee whether in a few hours or a few days or week and allow them to fill up the details of their vehicles along with the terms & conditions. The system is being developed for customers so that they can view available vehicles, register, view profiles, book vehicles. The proposed system is an entirely integrated online system or computerized system. It automates manual procedures effectually and efficiently. Vehicle rentals are subject to many conditions which may vary from one location to another and from one company to another. Generally the vehicle must be returned in the same condition it was rented in, and often must not exceed mileage restrictions; otherwise, extra fees may be incurred.

*Keywords:*Online vehicle rental system, computerized system, vehicles, vehicle tracking feature.

1.INTRODUCTION

Nowadays, the advancement in Information technology and Internet penetration is growing from time-to-time and has greatly enhanced various business processes and communication between companies and their customers, therefore, the demand for using it is increasing year-by-year. Besides, most of the traditional companies or individuals are shifted their traditional business model into the modern business model, which is open an online store to public Internet users to purchase the goods or services online of which the vehicle rental industry is not let out. It is more convenient than carrying the cost of owning and maintaining the unit. The main purpose of the Online Vehicle Rental System is to provide a platform for the individuals and the small, premium, and large vehicle rental business companies that can rent out their vehicles to the customers for short periods, generally ranging from a few hours to a few weeks and can gain some profit with it. It is being organized with numerous local branches (which allow a user to return a vehicle to a different location), and primarily located near airports or busy city areas and often complemented by a website allowing online bookings. This system also focuses on the customers by providing them with temporary vehicles like motorcycle, van, scooter, truck, car, etc., for example, those who do not own their vehicles, or owners of damaged or destroyed vehicles who are awaiting repair or insurance compensation or travellers who are out of town. This system facilitates customer and provides to fill up the details according to their requirements. Through this system, customers can view available vehicles, register, view profiles, book vehicles as well as drivers if they require. It includes a type of vehicle they are trying to hire and location. At major airports or in larger cities, some independent vehicle rental agencies can offer high-end vehicles for rent. Some specialized companies or individuals can also offer older vehicles at reduced prices. Alongside the basic rental of a vehicle, the vehicle rental system is being also offered extra products such as global positioning system (GPS) navigation systems, mobile phones, insurance, portable Wi-Fi, child safety seats, entertainment systems in the four-wheelers. This system may offer a range of vehicle sizes to suit a variety of budgets and space requirements and some additionally offer specialized vehicles to suit its location such as prestige models, convertibles, hybrid/electric vehicles, or SUVs (Sport utility vehicles) and passenger vans.

2. LITERATURE SURVEY

Many researchers have provided to this field in this paper including:

a) S Durai, C Shyamalakumari, S Florence, in Sep 2018, "Online High Priced Motor Vehicle Rental System". This rental system is used to get a request from the customer or client in the need for high-cost expensive vehicles. This system is more convenient and useful than showing catalog and bargaining the rental of the motor vehicle. This project purely based upon two factors, first the vehicle type and the second the duration of the vehicle going to use in days or hours.

b) Viacheslav Oliinyk, Oleksii S.Rubel, in Feb 2020, "Improving Safety and Ease of Use in Automatic Electric Vehicle Rental Systems". Typically, tourists do not use the services of local mobile operators because of the short stay. The article describes the NFC (Near Field Connection) technology which can be used in the tourism industry.

c) Yves Cyuzuzo, Rene Kabalisa, Chika Yoshida, Joseph Muvara, in June 2016, "Automation system of vehicle requisition in public sector, Rwanda".Rwanda government owns vehicles for facilitating government employees while they are performing official government business, employees share vehicle available through vehicle requisition process.

d) Joram Langbroek, Matej Cebecauer, Jon Malmsten, Joel Franklin, in Feb 2019,"Electric vehicle rental and electric vehicle adoption". This case study describes the project (The Electric Vehicle Country) in Gotland, Sweden, where the island Gotland is made "ready for electric vehicles" by providing a network of charging infrastructure and electric vehicle rental during several summer seasons.

3. PROPOSED SYSTEM

The system being developed will provide three main parts:
i) The system can be accessed by the users (owner of the vehicle) and the small, premium, and large companies who want to rent out their vehicles to the registered website customers.
ii) The system isbeing provided with a portal where customers can login to the system and search for the desired vehicle and reserve them for booking. It is being collected renting details from the customers and provides them the basic cost of the transaction and confirmation of the request.
iii) Business side users can update and renew details about vehicles and payments, etc. This will create reports of total reservations at a time.

The system being developed will allow the customer's associates to track the current status of the journey, also evaluates the remaining time until the customers reach its destination. The customers will provide a provision to login to the system and check the status of their journey. Along with this, the system will provide the facilities such as security of data, minimum time required, user-friendliness and interactive, better service, minimize the time needed for various processing, ensure data accuracy, greater efficiency, minimize manual data entry, search area, maintain quantity record. The vehicle tracking feature is appreciated widely at the time of theft prevention and emergencies such as accidents, as at the time of an accident, the tracking device triggers an emergency alarm that simultaneously informs the admin of the website as well as the owner of the vehicle so that they can inform it to the nearby hospitals or medical clinics about the incident and thereby asking for immediate help.

4. MODULES OF PROPOSED PROJECT

1) Login Module:
The login module authenticates both the user and the admin. Once the authentication is done, the user and the admin can perform their activities.

2) Admin:
Admin is the superuser of the website who can manage everything on the website. Admin can log in through the login page.The admin is the entity that will monitor the activities and the records of the whole system. Admin can add new vehicle details, manage vehicle details, manage vehicle brand details, add new vehicle brand details, check all registered users details, manage to contact us a query, manage booking details (admin can also confirm and cancel the booking of the

vehicles), manage testimonials details, update the contact details dynamically, manage subscribers, update other page content like About us details, term& conditions page, etc.The Admin can manage the rent so that the user can see the rent and book the car. The admin can easily view the feedbacks and solve the query.

3) Registered User:
The new user can register through the registration page.Registered user can login with valid email or mobile number and password. User can recover forget password after providing some correct information. The registered user module authenticates both the vehicle owners and the customers. Once the authentication is done, the vehicle owners and the customers can perform their activities.

   i. Vehicle Owner:
   The vehicle owner can be the individuals or the small, premium, and large vehicle rental companies. As the owner of a vehicle, the owners need to register their vehicle that they want to rent out with the system. During the registration, all the details or information about the vehicle will be fully given.
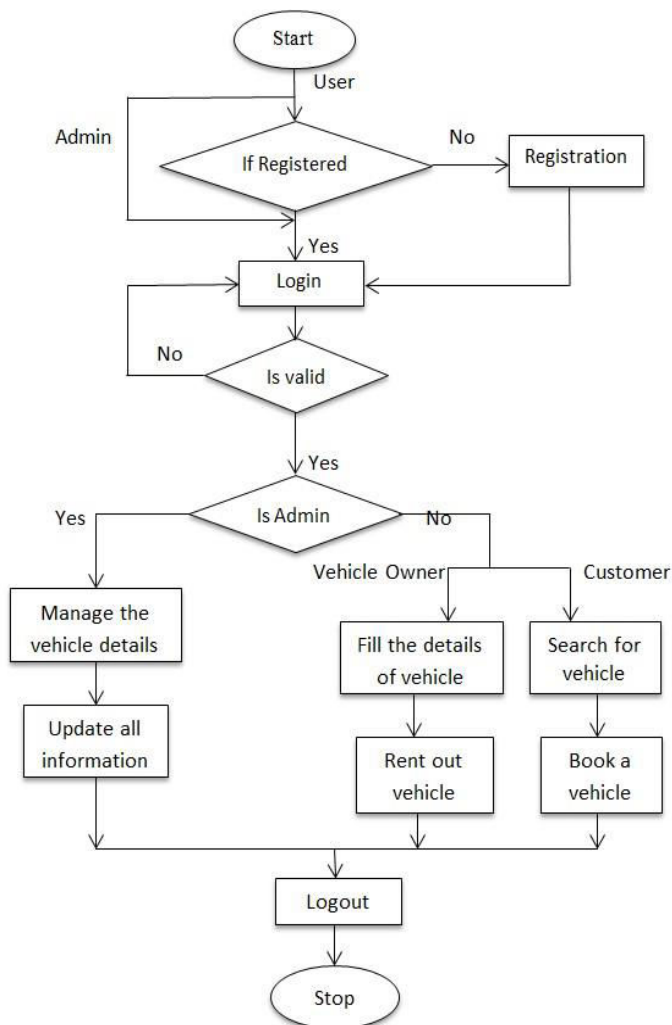
   ii. Customer:
   As a customer, the customers need to register and then search for the desired vehicle that they want to rent and the system will check for available vehicles with the same match. They can view testimonials, add testimonials.

4) Payment Module:
The payment module will retain the financial details of the vehicle rental system. This module will handle all the payments that are done by the customers and also pay the payments to the owner of the vehicle. After the amount is paid by the customers and paid to the vehicle owners, the receipt will generate the bill of the vehicle used and will reflect on the customers as well as the vehicle owner's accounts. This module will also keep the receipts of the new car is brought to the system so that it can further be used for analysis purposes.

5. SYSTEM FLOWCHART

6. DEVELOPMENT TOOL

System will be developed using Front End: HTML 5, JQuery, Javascript, Bootstrap, Back End: MYSQL or XAMPP Server, PHP.

7. CONCLUSION

The Online Vehicle Rental System is being offered an advantage to customers as well as owner or vehicle rental company to efficiently and effectively manages the business and satisfies customers' need at the click of a button. It provides a simple way of collecting useful information to measure this service. Concentrating on customer satisfaction helps an enterprise to achieve healthy growth in markets.

REFERENCES

1) Anonymous Car Rental System Based on NFC IN SPEC Accession number: 13769540
2) Automation system of vehicle requisition in public sector, Rwanda. IEEE ICIS 2016: 978-1-5090-0806-3/16
3) Swaine, Jon (14 September 2009). "Used-car buyers unwittingly bought ex-rental vehicles". Daily Telegraph. Retrieved 15 April 2013.
4) "Industry Standard Car Classification Code". Acriss.org. Acriss Association. Retrieved 24 April 2019.
5) "Car Rental Insurance Tip Sheet". Consumers Unified LLC. Retrieved 29 April 2014.
6) Yang, Y., Jin, W., & Hao, X. (2009). Dynamic Pool Segmentation Model and Algorithm in the Car Rental Industry. Journal of Computers, 4(12), 1202–1208.
7) Qurratul, A. (2012). Development of Car Rental Management Information System (Case Study: Avis Indonesia). In proceedings intl conf information system business competitiveness (pp. 104–105).
8) Li, Z. (2013). Design and realization of car rental management system based on AJAX+ SSH. Information Technology Journal, 12(14), 2756–2761.
9) Car Renting... Its Development... And Future", Automotive Fleet, December 1962.
10) T. Connolly and C. Begg, Database System: A practical Approach to Design, Implementation, and Management, Third Edition. England: Addison Wesley, 2002.
11) R. D. Sari, "Building Application System Car Rental Reservation and Payment Online Web-Based (Case Study in the Rental Daras Corporation)," unpublished. Undergraduate Thesis. Bandung: Unikom, 2011.
12) R. Mcleod and Jr. G. P. Schell, Management Information System, Tenth Edition. India: Pearson Education, Inc, 2007.
13) Avis Indonesia, "Journal Avis Indonesia," Jakarta: Avis Indonesia, 2009.