

## International Journal of Computer Science and Mobile Computing

A Monthly Journal of Computer Science and Information Technology

ISSN 2320-088X

IMPACT FACTOR: 7.056



*IJCSMC, Vol. 9, Issue. 5, May 2020, pg.109 – 112*

# Car Rental Application using Mobile Application Development

L. Sriram Narayanan<sup>1</sup>; A. Subhashree<sup>2</sup>; P. Vaanishri<sup>3</sup>; R. Akiladevi<sup>4</sup>

Computer Science & Engineering, Rajalakshmi Engineering College, Anna University, Chennai

<sup>1</sup>[sriramnarayanan1409@gmail.com](mailto:sriramnarayanan1409@gmail.com); <sup>2</sup>[subhashree1998dec@gmail.com](mailto:subhashree1998dec@gmail.com); <sup>3</sup>[vaanishri.premkumar@gmail.com](mailto:vaanishri.premkumar@gmail.com); <sup>4</sup>[akiladevi.r@rajalakshmi.edu.in](mailto:akiladevi.r@rajalakshmi.edu.in)

**Abstract:** Car rental mobile application ensures safety of both the renter and the renter's automobile. By a score allocation method generated from data recorded over years ensures the trustworthiness of the driver and the vehicle. The data is pulled out based on the renter's Driver's Licence or the renter's car's RC Book and Insurance details obtained during login. When a user enters his details it will be verified with a database by an authority who awards a Credit score (out of 5), based on his prior history. Based on a renter's score the cars that are most likely to be available to him are displayed. Out of these he/she picks one and a request is sent to the renter. The renter on receiving the request chooses to give his car to the renter or decline the request. If the renter's scores are so low that he is not being accepted by any renter, He can be awarded with one of organization owned cars with higher fares and critical monitoring systems. In order to update scores in the database a routine verification will be done every 3 months and based on the findings the score will be increased or decreased by a defined value. This improves the efficiency of renting and lending cars and makes the process easier.

**Keywords—** mobile application, dataset, Credit Score, Monitoring Service System, Car Rental Organizations-CRO

## I. INTRODUCTION

A mobile application, or an app is a computer program or software application designed to run on any mobile devices such as phones, tablets, or watches. Apps were created originally for optimistic assistance such as mail, calendar, and contact databases, but the worldly demand for mobile applications caused rapid growth into other areas such as online multiplayer games, Global locationing systems, industrial automation, food and produce order-tracking, and movie ticket purchases, so now there are millions and millions of applications available. Applications are generally downloaded from distribution platforms such as the App Store (ios) or Google Play Store. Some apps are free of cost, and others have a price, with the profit being split between the application's creator and the distribution platform. The Transport Facility is a headache for those people who do not have any personal transport in their city. On occasions like weddings, vacations, House shifting, tours outside the city and in many other situations they feel the necessity of a vehicle to sort out the problems. So if it is possible to design a mobile application for availing transport whenever and wherever possible, it will be beneficial for both renter and transport provider. Nowadays, with a click of a finger, we can get whatever we want at home. We already know about online shopping, e-banking etc. Similarly, the Car Rental Application is the online facility to book or lend cars online within a few clicks. Many people cannot afford to own a car, for those people this system is very helpful. This system includes various cars, as per the customer preferences and comfort. This application places the order and delivers the car as per the location within the area. For long distance travelling, booking can be done via internet services.

The advancement in Information Technology and the world of the internet has greatly changed various business processes and communication between organizations (services providers) and their customers of which the car rental industry is

of no exception. When building the Car Rental System, the group was strong on a easy-to-use user Interface which is the key to make the system sustainable. With a simple user interface, the administrator or users don't have to rely on IT help to navigate and operate the functions found in the system. The users can have simultaneous access to the same database containing the rental orders and car availability which is automatically built and maintained with fast access to files from the database in order to maximize retrieval speed. By using the system, the user eliminates duplication of the work required to maintain multiple databases. There is also less chance for error, because a material or patron record is only entered once and any changes made to a record are automatically recorded throughout the system. The general objective of this project is to change the manual system into a web based computerized system which helps renting cars and making tours into a simple and easy modern way to contact with customers.

## II. RELATED WORKS

Car rental organizations are getting the cars from the owners so they have to give the surety and security to the car. For the safety & security, anti-theft and current status of cars, we are using several techniques because CRO gets the cars from owners and provides the services to the customers. So that the CRO is in the position to return the cars in good condition to the owner.

In the car vehicle tracking device is installed. It will find the location of the car and track the vehicle by the help of Global Positioning System (GPS) and Global System for Mobile communication (GSM).

To improve the safety, security and antitheft, a camera attached hidden in front of the driver. It will capture the picture after starting the vehicle, and compare it with the customer picture. If the system is found that the images are not the same by the face detection technique then it will send a picture to the owner by MMS and it will stop the engine.

UML which is a general-purpose, developmental, modelling language in the field of software engineering provides a standard way to visualize the system design.

## III. LIMITATIONS OF CURRENT SYSTEM

In the current system, from the CRO point of view, it is a one way business and CRO has to invest huge amounts to buy the cars. Because of a huge investment, CRO hasn't been able to provide various models and high end cars. This problem can be solved by the proposed system.

In the user point of view, in the current system, rent service is provided with a driver. So the customer has to pay the driver's fee in addition to the rent money. But the proposed system is supporting the customer to take the car without a driver. Also it provides the online payment on a daily, weekly and monthly basis.

## IV. PROPOSED SYSTEM

In the current system, it has only two actors one is manager and another one is customer. But in the proposed system, it has three important actors are; administrator, users and owners. Here discussing the three actor's benefits and work flow.

### A. Users

In this system, the one who is renting the car from the car rental organization is considered as the user. This system provides two types of rental process that is with driver and without driver. If the user is interested to drive the car, then in the agreement the user has to choose the non-driver option, in this the owner will hand over the car to the user's place. To start the renting process in a car rental organization, a user has to create an account by providing his/her personal information, username and password. To access this system user name and password is a must in order to lend or rent cars through the application. To take a rental car from the organization, the user has to fill the form; it needs the travel information like how many days the car is needed, date of travel, preferred car models and return date. While selecting the car; customer can view the car information like car manufacturer name, model, year, insurance and finally it needs the customer picture for the anti-theft tracking.

The Customer can pay the car rent online. It's supporting pre-payment only. The rent of the car is calculated by kilometre basis or daily, weekly and monthly rent basis. Customer has to pay the full amount before taking the car from the organization. After returning the car again the system will check the amount. If the customer has to pay an additional amount then the system will take money from the customer account by GIRO (General Interbank Recurring Order) [3] or the customer has to pay by online. If the organization has to repay the excess amount to the customer then the system will transfer the money from the organization account to the customer.

### B. Car Owner

This system is providing good business for the car owners. All the people do not have the business interest or know the techniques involved in the business. They will be interested in acting as silent partners because they are not ready to take the risk. Interested car owners have to make an agreement with the CRO. Agreement is considered; vehicle information (make,

model, vehicle Identification Number, color, year, mileage), agreement period (monthly, yearly), insurance, condition of car, maintenance and repair (routine maintenance, breakdowns & repair, accidents & repair), and permit.

Also the car owner has to select the payment term (weekly or monthly). Based on the selected payment term and mode, fares will transfer from the car rental organization account to car owner account. Online modes are automated electronic payment possible (GIRO) by the agreed payment date and amount [5].

System provides safety and security by using anti-theft mechanisms and the current status of the car (current location and travelled distance) is sent to the car owner. To see this information the car owner has to login and select the car if he provided more than one car to the organization in car rental organization website by using the GPS technique and GSM modem.

**C. Admin**

The datasets will be created and managed by the admin. If any user needs a car they need to enter their credentials and sign in. Then the user must submit his/her licence copy and it will be viewed and verified by the admin. Also based on the complaints, the record admin will provide rating to that particular user. Admin has some other responsibilities they are

- Admin can maintain the details of each and every user and owner.
- Admin can export the details to the database.

In this proposed system, CRO is getting the two way business. First one is; renting the car to the customer, from that renting process CRO gets profit. Second is; getting the car from the car owners. Here the CRO shares the profit and resources with the car owners, by this way CRO can increase the number of cars as well as can get the different models to satisfy the customers.

CRO is making the agreement with customers, car owners and banks. As per the agreed fare and date, the money will transfer to the car owner account from the CRO’s account. In the same way; as per the agreed amount and date, the amount will transfer to the CRO account from the customer account. So both the user and the CRO must maintain sufficient funds for transfer.

CRO provides the driver services based on the customer request. The driver fee will be included in the rental agreement if a driver option is included.

**Feedback:**

After the completion of any transaction both the user and owner are asked for feedback. Here they can provide their experiences, shortcomings in the provided service and any other helpful remarks. These feedbacks can be referred to later when another user wants to rent that car or when an owner needs to know about a user who has requested for his car. This in the long run will turn into a repository of comments useful for everyone involved.

**V. DESIGN**

In fig 1: We have given the use case diagram for the proposed system. In this proposed system there are only three actors; User, car owner and Admin. Each actor is having their own activities. The activities of Admin in the proposed system are: Register, login, verifying user/owner’s details and provide rating. Activities of Car owners are register, login, upload RC book details, check requests and send responses. Users can register, login, upload licence, verify status and can send requests.

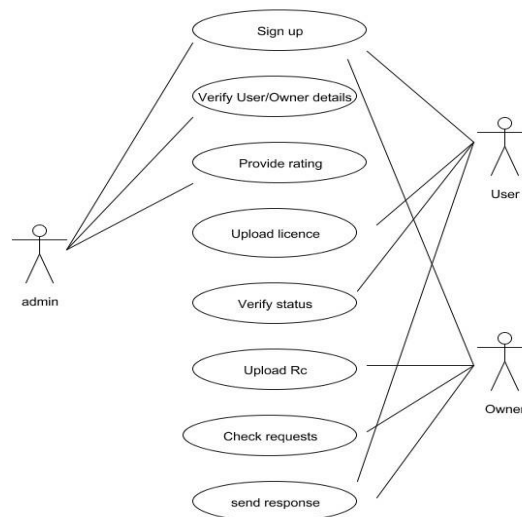


Fig. 1.Usecase Diagram

## VI. CONCLUSION

In conclusion a web based application is created for the ease of both customers and organisations that would like to implement car rental services. It ensures ease of use at the same time emphasizing on the safety of all parties involved. This application on a broader level will help us understand the preferences of people when they rent a car and collection of that data will be useful to improvise such future applications. The feedback facility enables customers to provide reviews that other people could be benefited from.

## REFERENCES

- [1] Bayu Waspodo, Qurrotul Aini and Syamsuri Nur, 2019 “DEVELOPMENT OF CAR RENTAL MANAGEMENT SYSTEM”
- [2] Chennupati Yogender Sai, D.Saravanan, Yanamadala Varun Tej, Tubati Hari Vineesha, 2019 “SMART RENTING OF VEHICLES USING IOT”
- [3] Gaurav Patel, Amol Koli, Rakesh Kadam, Rahul Bhat, Prachi Kshirsagar, 2018 “ON HIRE: CAR RENTAL SYSTEM”
- [4] Khaerul Anam1, Asep Taufik Muharram, 2018 “ANALISA DAN PERANCANGAN SISTEM INFORMASI AKADEMIK BERBASIS”
- [5] Nahlah, Amiruddin, 2019 “The Implementation of OOP (Object Oriented Programming) in Building an E-Commerce Website”
- [6] Suryadev Singh Rathore, Mahik Chaudhary, 2019 “ANALYSIS OF SELF DRIVE RENTAL CARS INDUSTRY IN INDIA”
- [7] T. Prince, M. Jenifer, Axumawit H, Betelhem H, Firkremariam G, Hana S, Saba W, 2019 “DESIGN OF CAR RENTAL MANAGEMENT SYSTEM FOR ORGANIZATION, CUSTOMERS AND CAR OWNERS”