Car Rental System for Maharashtra (Android app)

Joydeep Sarkar[1], Yadnesh Khode[2], Shubham Jadhav[3], Prof. Akshata Laddha[4]

[1,2,3]B.E.Students, [4]Assistant Professor
B.E. Computer Engineering,
D.R.I.E.M.S., University of Mumbai

***Abstract*: Nowadays, there are online car reservations which give much benefit to user. The existence of this online system can overcome the problem of availability and provide convenience to the user in renting, vehicle yet users still need more convenience system such as helping them in recommending vehicle to be rent based on car specific requirements.**
The user selects their preferred car from the car catalogue. Reservation can be done through online and users have to come to the hotel to pick the reserved car. This system is functioned in retrieving, creating, updating and deleting the data or information depends on the security level and allows the organization to search user information from the database based on their identification. Besides that, this system may produce reports such as payment receipt, renting information and statistics of vehicle renting by year, month, or week. The finding of this project is the android-based car rental system with recommended vehicle to be rent and the output that will produce the information by following the user requirements. In this system car owner track car means the location of car is easily getting by owner.

***Keywords*: GPRS –General Packet Radio Service.**
SMS-Short Message System.
GPS-Global Positioning System.
CS-Customer Service Module.
WP-Web Portal Module.
FM-Fleet Management Module.
RA-Reports and Analytics Module.
SDK-System Development Kit.
WORA – Write Once, Run Anywhere.
DB-Database.

INTRODUCTION

We aim to become a pioneer in the car rental industry by completely focusing on customers, our employees, growth, innovation and efficiency. All of these elements will drive us towards success and show us as one company that can perform and give value for money.

A GPS tracking unit is a device, normally carried by a moving car or person, that uses the Global Positioning System to determine and track its precise location, and hence that of its carrier, at intervals. The recorded location data can be stored within the tracking unit, or it may be transmitted to a central location data base, or Internet-connected computer, using a cellular (GPRS or SMS), radio, or satellite modem embedded in the unit. This allows the asset's location to be displayed against a map backdrop either in real time or when analyzing the track later, using GPS tracking software. Data tracking software is available for smartphones with GPS capability. The company wants to find a solution to reduce its operating costs. The system being developed is a system to handle the business needs of renting out vehicles to customers, maintaining records and data on vehicle fleet, operating the customer portal website, and reporting the state of the system to the company. The system does not fulfill any other needs of the business. The functional scope of the system is represented in four different aspects of the system: Customer Service Module (CS), Web Portal Module (WP), Fleet Management Module (FM) and Reports and Analytics Module (RA).

1.1 Existing system

This project is being considered in order to reduce and totally eliminate loss of customers to competitors, and save the company from folding up. The current system is manual and it is time consuming. It is also cost ineffective, and average return is low and diminishing. Currently, customers can call or walk-in in order to rent or reserve a car. The staff of the company will check their file to see which car is available for rental. The current system is error prone and customers are dissatisfied. The goal of this project is to automate car rental and reservation so that customers do not need to walk-in or call in order to reserve a car. There is huge amount of amount of paperwork involved in the process. The system makes a general report about the rented vehicles once at the end of the month and generates a report. He/she is expected to go to the organization to make reservation. During renting a car the customer personal information, payments status and rent agreements are filled in the car rent agreement form, in order to hold legal contract between the customer and vendor for renting the car.

1.2 Proposed system

The proposed project keeps in mind undermines of the current system as stated earlier. It consists of a login portal for customers, agencies and workers. Distance and position calculated by Google API and Google Maps. Online invoice generation. Instant reservation confirmation or payment confirmation by mail or SMS, Reminders on timings of vehicles and pickups, Pick-up and drop-off at locations, It will also keep track of all vehicle reservation and return. Reports will be generated bi- weekly. The working in the organization will be well planned and organized. The data will be stored properly in data stores, which will help in

retrieval of information as well as its storage. In this system owner of the vehicle easily track vehicle location by using android app of the driver.

The level of accuracy in the proposed system will be higher. All operation would be done correctly and it ensures that whatever information is coming from the center is accurate. The system should be easy to operate and should be such that it can be developed within a short period of time and fit in the limited budget of the user. In the proposed system utmost care would be that no information is repeated anywhere, in storage or otherwise. This would assure economic use of storage space and consistency in the data stored. The reliability of the proposed system will be high due to the above stated reasons. The reason for the increased reliability of the system is that now there would be proper storage of information.
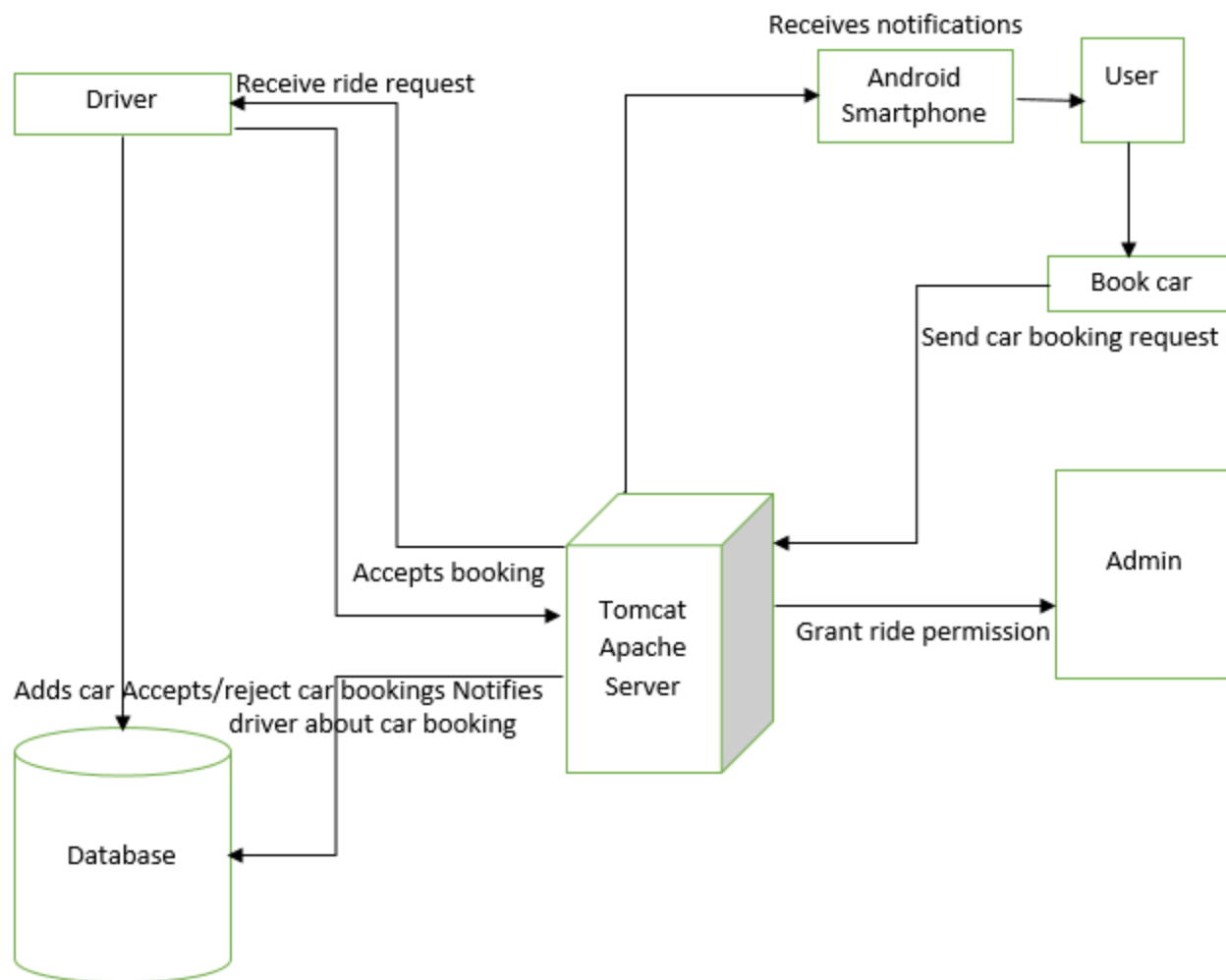
System Architecture

2   Languages Used

Java: Java is a computer programming language that is concurrent, class-based, object-oriented, and specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "write once, run anywhere" (WORA), meaning that code that runs on one platform does not need to be recompiled to run on another. . The programmer determines when objects are created, and the Java runtime is responsible for recovering the memory once objects are no longer in use. Once no references to an object remain, the unreachable memory becomes eligible to be freed automatically by the garbage collector.

MySQL:

MySQL is well known as world's most widely used open-source database (back-end). It is most supportive database for PHP as PHP-MySQL is most frequently used open-source scripting database pair. The user-interface which WAMP, LAMP and XAMPP servers provide for MySQL is easiest and reduces our work to a large extent.

Conclusion

Thus we have developed an Android app for car rental system .Using this app user has the liberty of booking any car of his choice as per the occasion .Also we have provided a payment gateway using which user can make payment either by using debit or credit card .Also user has the choice for opting for a driver .The user can either opt for a driver or not opt for a driver .Our system is basically made of three apps .One is given to the user, one to the Admin and other to the driver

.The user app allows user to choose from the variety of cars, select the pick-up point and the destination .Also it contains the payment options .The admin app is solely controlled by the administrator .He/She is responsible for adding deleting cars,

accepting/rejecting booking and so on .The driver app is controlled by the drivers .They can accept or reject the request made by the admin to the driver.

Our application is limited only to the users in the Android eco system. In the future maybe the application can be developed for iOS .Also Machine learning can be used. Machine learning algorithms can analyze the user's behavior patterns and searching requests to make recommendations for him. You can also optimize searching process by applying machine learning to your Android app. Add a voice search, spelling corrections, suggestions and the searching process for your users will become more intuitive and less troublesome.

References
1. System, Online. 'Online Car Rental System'. Academia.edu. N.p., 2015. Web. 9 June 2015.
2. Scribd.com, Online. '49930505 Car Rental System Project Report'. N.p., 2015. Web. 9 June 2015.
3. Scribd.com, Online. 'Car Rental System Documentation'. N.p., 2015. Web. 9 June 2015.
4. Freelancer, Online. 'Project Documentation Car Rental Company Software Development Freelancers and Jobs - Freelancer'. N.p., 2015. Web. 9 June 2015.
5. Slideshare.net, Online. 'Zook Car Rental System Project'. N.p., 2015. Web. 9 June 2015.
6. Kaewman, Sasitorn. 'Online Decision Support System of Used Car Selection using K-NearestNeighbor Technique'. IJFCC (2012): 164-166. Web.
7. Wikipedia, Online. 'Use Case Diagram'. N.p., 2015. Web. 9 June 2015.
8. Wikipedia, Online. 'Activity Diagram'. N.p., 2015. Web. 9 June 2015.
9. Tutorialspoint.com, Online. 'UML - Activity Diagrams'. N.p., 2015. Web. 9 June 2015.
10. Wikipedia, online. 'Swim Lane'. N.p., 2015. Web. 9 June 2015.
11. Mindtools.com, Online. 'Swim Lane/Rummler-Brache Diagrams: Mapping and Improving Processes in Your Organization'. N.p., 2015. Web. 9 June 2015.
12. Laudon, Kenneth C, and Jane Price Laudon. Management Information Systems. Upper Saddle River, NJ: Prentice Hall, 2000. Print.
13. Menkus, Belden. 'Car Rental Chain Former Owners Charged With Computer Frauds'. Computer Fraud & Security Bulletin 1993.3 (1993): 3-4. Web.
14. Li, Zhang. 'Design And Realization Of Car Rental Management System Based On AJAX+SSH'. Information Technology J. 12.14 (2013): 2756-2761. Web.
15. https://core.ac.uk/download/pdf/11734590.pdf