

AN ANDROID APPLICATION TO HIRE A DRIVER FOR PRIVATE VEHICLE

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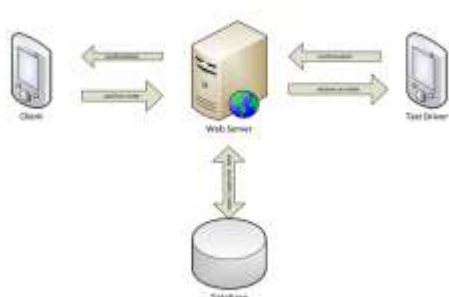
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Abstract - Now days in India driver booking system is getting very popular and Most of the people want an ease of travelling using drivers. Instead of asking for auto rickshaw and taxis. Since there are lots of applications available for driver booking but they use centralized approach to maintain data. But if any failure in centralized server will cause whole system to go down. Our approach is to design a driver booking system using server based approach and also to maintain safety of passengers. And the driving patterns of driver using accelerometer. In this study, we design and implement the intelligent server based driver system for serving passengers using local information. The implementation and analysis of proposed approach are carried out by using an android-based web service based system framework. Simulation results manifest that our approach is able to encounter the shortcomings of the existing system.

Key Words: Android Application, Smartphone, K-Nearest Neighbour Algorithm, Speed Monitoring, GCM, GPS.

1. INTRODUCTION

In last few years technology has been very much ahead in all fields. It plays vital role in human commerce. For human commerce there are many application and websites are available on internet which has made life easy. Likewise, there are many more applications provides a driver on demand to customer wherever he needs. For example, DriveU, Drive4U, Hire4drive: Car Drivers and Cabs, Swift partners, Hopp-on demand driver. These applications provide convenient and best service to customer but still some issues are there like existing system is not transparent with customer. In existing system some problems occur like finding location of customer, customer cannot trace the time and location of driver therefore customer has to face many problems. So we are going to upgrade or add some point in existing system which will help the customer to find driver in his own area. It will reduce time and minimize the location finding issues.



The system gives a customer an opportunity to book driver using an application in his mobile device. The client-side application allows the customer to book driver to the specified location. The customer can use the current GPS position or pinpoint a desired location on a map.

1.1 Aim of Project

The aim of this work is to design a system for booking drivers. company with support for mobile devices working on Android OS. The designed system consists of:

- A client mobile application for customers;
- A mobile application for drivers;
- A server with a database.

1.2 Scope of Project

Proposed system tracks the location and speed of car. Also maintains the driver's database and keep track of customers feedback. It gives the conditional offers to the driver as well as customer. Our system will mainly focus on booking driver and providing safety to our customers. It uses google maps, sensor and web services to implement our objectives. Sensors are used to detect the driving patterns of driver in order to evaluate driver's rating.

1.3 Motivation

Our system will be more secure and it will be more user friendly. And also protects data on server side. It also provides a way to manage driver data and to watch over them and their activities. Admin can also view statistics of driver in order to analyze drivers pattern of driving.

As it is based on nearest neighbor algorithm it can be consider as very powerful system to search drivers.

1.4 Objective

- Maintain driver's database.
- Make driver list available to user from the nearest area.
- Tracking driver's location using GPS and off-track alert system.
- Self-registration for drivers and users.

2. Literature Survey

1. Sandeep Gupta, Attaullah Buriro, Bruno Crispo "DriverAuth: Behavioral biometric-based driver

authentication mechanism for on-demand ride and ridesharing infrastructure.”

A behavioural-biometric-based authentication [1] scheme in the context of on-demand ride and the rideshare services. The approach can be extremely useful to verify drivers remotely. This scheme can be extended to verify the intended riders as well the scheme is unobtrusive as verification is performed in the background and is invisible to the driver. The scheme has shown resistance to mimicry attacks as the invisible person-specific behavioural modalities. Owing to space limitations, they will report the detailed methodology and the results of an extended empirical evaluation in a future paper. they will also explore the impact of its extension in terms of more modalities and they will evaluate them in terms of their accuracy, performance, and usability.

2. Kacem Abida, Rainer Stahlmann, Florian Netter, and Carlo Ratti “Driving Behavior Analysis through CAN Bus Data in an Uncontrolled Environment.”

Driving behavior analysis has been studied from a new point of view, that bridges the gap between driving behavior studies through uncontrolled experiments leveraging only the GPS signal and studies exploiting CAN bus data through very controlled experiments. This work proposes a methodology for delineating similarities among drivers using data collected in a completely uncontrolled experiment, through a clustering algorithm performed on seven different features of eight signals recorded by CAN bus sensors, with a distributional approach.

3. Hemanth Kumar and K. Sentamilselvan “Customer Satisfaction towards Call Taxi Services A study with reference to Chennai.”

There is stringent competition in the organized cab services industry therefore organization need to motivate consumers through coupons. The innovative behaviour of consumers helps to download mobile apps and further motivates them to redeem coupons while booking cabs. The results of this study are consistent with earlier research studies because it is found that price conscious consumers are likely to redeem coupons. The modern consumers are innovative and at the same time they are price sensitive therefore coupon redemption helps for customer retention. [3] The brand image also plays a vital role in customer retention apart from offering coupons.

4. Dr. Ruchi Shukla, Dr. Ashish Chandra & Ms. Himanshi Jain “OLA VS UBER: The Battle of Dominance.”

India’s major attractiveness lies in its market size and increased purchasing power resulting in uplifting lifestyles. On the other hand, Indian consumers are smart, very demanding and highly price-sensitive with no brand loyalty; managing such market is not an easy task. Companies need to constantly be on their toes and keep designing new packages and offers to allure the customers for long which at times result in a lot of cash burn.

5. Dr. P. Kishore Kumar¹, Dr. N. Ramesh Kumar² “A Study on Factors Influencing the Consumers in Selection of Cab Services.”

The customer satisfaction about the call taxi services, the factors they give importance in selection of the service provider, tariff, comfort, convenience, service quality and customer care rendered [5]. The finding depicts the exact replica of the customer’s mindset and level of satisfaction towards the service providers operating the call taxi in the Chennai market. Appropriate suggestions were provided considering the facts and feasibility, if the market players take these outcomes into account and act, its sure to create fullest satisfaction rather delight the customers and expand the market base. This will also help the service providers full fill the customer expectation that fetches the good will and develop their brand image in the market.

3. Existing System

Existing system provide lot of facilities to customer but there are some issues. From customer reviews about existing system there are transparency issues, scheduling problems about driver, Location tracking issues, admin cannot verify driver. Proposed system overcome these problems by providing tracking system, speed monitoring facilities.

4. Proposed System

Proposed system tracks the location and speed of car. Also maintains the drivers database and keep track of customers feedback. It gives the conditional offers to the driver as well as customer. Our system will mainly focuses on booking driver and providing safety to our customers

4.1. System Architecture

System architecture shows the overall plan or model of a system consisting of all specifications that gives the system its form and structure i.e. the structural implementation of the system analysis. This application use to find out drivers which are nearest to current geographical location of mobile device.

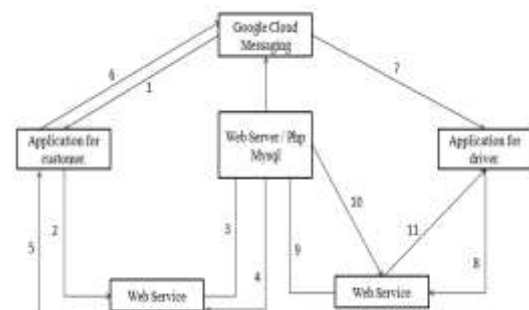


Fig No.4.1 System Architecture

There are two applications one for driver and one for customer. The mobile application will communicate with the server through web service calls using JAVA and PHP interface. After calling web service the query parameters will be send to PHP server and after processing of query on PHP

server it returns back to mobile application in JSON format. Once a response is received on application side it parses the response and the operation is reflected on user interface. Both the applications are registered with the GCM in order to receive push notification.

4.2 Algorithm

Nearest Neighbour Algorithm:

Introduction to K-nearest neighbor classifier K-nearest neighbor classifier is one of the introductory supervised classifier, which every data science learner should be aware of. Fix & Hodges proposed K-nearest neighbor classifier algorithm in the year of 1951 for performing pattern classification task. This algorithm is based on customer location. It uses neurons as its node to find the output node every node is represented by location of driver and output node is represented by location of customer it works on the principle of shortest path algorithm.

K-nearest neighbor (Knn) algorithm pseudocode:

Let (X_i, C_i) where $i = 1, 2, \dots, n$ be data points. X_i denotes feature values & C_i denotes labels for X_i for each i .

Assuming the number of classes as 'c'

$C_i \in \{1, 2, 3, \dots, c\}$ for all values of i

Let x be a point for which label is not known, and we would like to find the label class using k-nearest neighbor algorithms.

Key generation algorithm:

Key generation is the process of generating keys in cryptography. A key is used to encrypt and decrypt whatever data is being encrypted/decrypted. A device or program used to generate keys is called a key generator or keygen. Key generation algorithm is used to authenticate uniquely identify the customer. This is process of generating authentication token during registration process to identify the customer and driver uniquely. It generates 14 characters random key using random number generator algorithm. It is 16 bit key which is generated by using SHA algorithm provided by JAVA API we calculate message digest by passing email id & customer name which returns a random key to uniquely identify a customer.

Email:

The email mechanism is used to send OTP to driver. It is implemented by using PHP mailer API which intern uses curl request to mail server we pass different parameter to curl request like to, from, subject & body to curl request & execute the request.

5. Advantages of Proposed System

- Information of driver and the location is quickly shared with customer.
- It almost displays nearest location of driver.

- We can track the live location of driver and it can share with your family/friends.
- It greatly reduces the time needed to generate nearest location driver.
- It provides an easy to handle.
- Driver can choose drive.

6. Conclusion

Proposed android application will be easy to customer for hire a driver. Customer can book the driver as per their requirement and get the driver details with acknowledgement to/from the driver online thereby saving time and money.

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