

Review Article

Transformation in Transportation Services: Design and Evaluation of a Cab Booking Application for Enhanced User Experience

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A B S T R A C T

This Cab Services Software is a current tool for resolving our day-to-day transportation issues. When it is about getting from one area to another, there are several concerns to consider. Some individuals do not own automobiles, while others prefer to utilise public transportation such as buses. Independent taxi proprietors demand higher prices, among other things. Cab service software promises to help customers confronting these challenges by making cab journeys easy to schedule, inexpensive, pleasurable for everyone with a smartphone. The cab services app is a two-way tool that entices both clients in need of a trip and taxi owners and cab service providers to register with the app, therefore closing the gap between clients and cab owners. This application reduces the necessity for negotiation between consumers and drivers by ensuring that the amount one pays for a journey is the lowest possible. This is secured by the fact that there are several cab service providers, the customer may choose the one delivering the finest services at the cheapest rate.

Keywords: Taxi Booking, Cab Booking App, Mobile App, Online Taxi, Cab Service

Introduction

To start as a cab driver, one has to obtain a cab using license, a cab permit. Cab drivers commonly belong to the lower economic margins of society, hail from Vellore and its surrounding areas.¹

Cab fares are set by the local municipal authority, in session with cab unions, public representatives, deliberating aspects together with consumer charge index, inflation, gas fees. In case of non-standard rides, the cab drivers (although it is remitted via law for them to just accept all trip-requests) usually, demand better fares from the passengers, or refuse accept the trip request.²

We live in country where more people have access to

smartphones than toilets. Technology has reached even the most rural places in India. Cabs predominantly are seen as a luxury that can only be afforded by urban people. We aim to change that. Since, the proposed application allows various taxi service providers to register with the cab service (subject to approval), the aim is to provide employment to local drivers coming from rural areas by providing them with an opportunity to drive their own taxis. These taxis can provide a cheap transportation to people living far from cities.³

This cab application when implemented, finally can be improved further by a number of ways like user feedback, questionnaires, etc.

Research

India appears to be going via a 'Taxi' revolution. Each day, there's a new start up providing efficient cab service to the residents working in both urban and rural existence. The intra-city tour has always been a curse for plenty of individuals, particularly in crowded cities like Mumbai, Chennai and Bangalore.

While the trains grow to be an important source of transportation saving money and fuel and help avoid bumper-to-bumper traffic in cosmopolitans like Mumbai, the dangers of journeying by means of those trains are innumerable. The distances in Bangalore overwhelm the spirit out of anybody who travels, the site visitors make it horrible to force your personal car in the town. We plan on introducing a cab service that if started in Vellore can provide relief to these problems.

OLA

OLA is a major India based online transportation Network Company. It was founded as an online cab aggregator in Mumbai but is now based in Bangalore. It is one of the major names when it comes to taxi booking apps and is spread across more than 100 cities in India. However, the rural reach of the company is limited and there are many issues that come along with being such a huge company.

UBER

UBER is a San Francisco based multi-national ridesharing, food delivery and transportation Network Company. It is spread across more than 600 cities across the world and is often a subject of controversy due to one reason or another.

Issues Identified with Current System

The most widely used way of travelling other than public transports like buses and trains are, private cabs and rickshaws. The drivers often ask for very high fares especially from travellers and non-local people. Even the everyday travellers have to bargain before agreeing for a fair rate. These cabs are also not considered very safe at night as they are privately owned and lack a strict governing body. The drivers don't care about customer satisfaction and are often pretty reckless while driving. These problems are targeted by the cab booking services app. Since, there are multiple options in terms of cab service providers, drivers who misbehave or ask for higher prices won't receive customers and bad reviews will lead to even lesser people choosing the said service provider. The app shows the customer rating of each taxi service provider next to their names when one is booking a cab.⁴

Another major issue that was identified was drivers getting lost following the Google maps. Since, some services rely heavily on Google maps for travel, there are cases when people take wrong paths because of outdated maps

especially in small cities and rural areas. This is not an issue with the cab booking services app since local taxi drivers are registered with the app.⁵

This app also encourages cab pooling. India is a very densely populated country, so it is not hard to pool people travelling in same direction together. This is a very good option for price - sensitive people and daily travellers.

Proposed Application

This app provides reliable online (internet based) cab (car) booking facility to people in various cities in India, free of cost. It acts like a Bridge between the cab operators and the customers/users/people who book a cab. This is the online cab booking service provided to both the customers and the taxi owners. This brings together the registered travel agencies/cab operators/cab owners and the customers. The app provides this service for free of cost i.e., we provide free registration for the cab owners and free service to the travellers/customers/users who go for booking a cab or car or taxi.

Here the customers can book a cab/taxi/car by viewing all the cab details and pricing details available, according to selected city and area. It is the reliable service provided to both customers and travel agencies. This provides service with well-conditioned new vehicles, with experienced verified drivers for a happy journey of the customers.

Through the app, one can book a taxi from both rural and urban areas. It is proposed to have registered travels or cab operators from all famous cities throughout India like Hyderabad, Visakhapatnam, Bhubaneswar, Calcutta, Chandigarh, Chennai, Bangalore, Delhi, Cochin, all other major cities including nearby rural areas.

Cab Search

User can search cab for a particular location here. User is required to enter Source, Destination and place where he wants to reach. The user is then allowed to choose among various available taxi service providers in that area.

Agency Registration

A travel agent can register themselves in the application for a particular destination. They have to submit their official documents (copy) for security and verification.

Login Process

In this the customer has to give out the login details i.e., phone number and OTP, then only he can be logged on. The user id and password given by the customer are checked from the data stored in the database.

Registration Process

User must be registered before booking a cab. Proper validations will be provided to keep only authenticated

users i.e., those users who will provide correct information. All the data supplied by the user will be stored in database and it will be used for further validation and authentication. During registration, user has to give login and password of their choice.

Login names and passwords will be stored in the database so that user can directly login without registering again and again.

Booking Confirmation

After validating the entered information and getting approval from credit card authorization service the system provides the visitor the notice on successful registration. A message with details of the ride is then sent to both the taxi driver and the customer Figure 1.

Customer Feedback

Customers are encouraged to submit feedback regarding their overall experience as well as the taxi service provider they chose for their ride. This feedback is displayed next to the taxi service names at the time of cab booking and might come in handy.

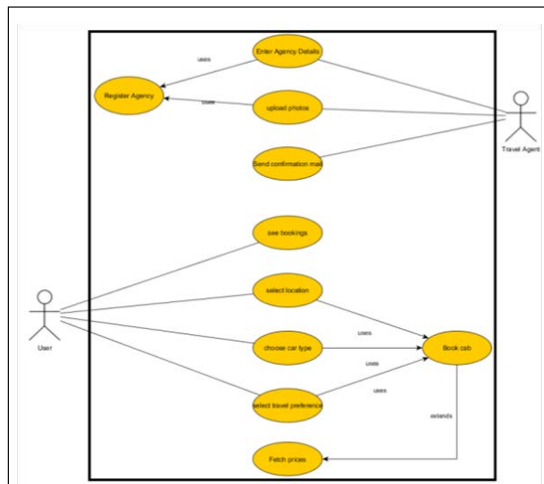


Figure 1. Use – case Diagram for Cab Booking Services Application

Software Development

The application was built following a proper software development model. The first step was to collect information on the various facets regarding a cab booking application and various requirements associated with the development of such an application. The internet came in handy for this task as there are numerous feedbacks and suggestions by real consumers as well as a ton of information about some existing services available on the internet.

Next important phase was the Architecture design phase. Since, the most important feature of this app is its two-way nature i.e., it allows both the customer as well as the service providers to register; we divided the app architecture into

two parts – 1. The customer part and 2. The taxi service provider part. We wanted the application design to be simple and user friendly. So, we stayed away from complex design for both our customer and taxi service provider sections of the application.

After the Architecture and design phase, the coding part was done. Testing of the application was done next. We ran much different iteration of simulations to test the breaking points of the app and tried fixing them during the testing phase. Since, no one can claim their application to be free of bugs and errors, we don't either, as the most important test of any software is when it is up and running in the real world.

Conclusion

Smartphone applications for cab booking are a basic demand of the public nowadays, especially in metropolitan regions, where this application is gaining popularity. When reserving a taxicab, the passenger may even consider the driver, the kind of car, other minor details. The programme connects the end user with the vehicle's driver and maintains contact until the trip is completed. Travel businesses have to connect with service providers via the application and are therefore trustworthy.

There are several ways in which the program which could potentially be enhanced. The feedback system may be improved, additional functions can be introduced in the future to assist long-term users and consumers. The majority of transit facilities exist in urban places, while none exist in small towns, villages, or cities. As a result, certain tiny towns like Vellore and Ooty, where there are few convenient travel choices will be included to the app. This software will make it easier and more comfortable for users to commute from one location to another.

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