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# Smart Cab Booking System using Mobile Application

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**ABSTRACT:** The rapid development of transportation in urban areas, there is a growing need for effective and efficient services from cabs. The traditional methods of booking cabs are time-consuming and lack transparency in terms of tracking. The current research aims to develop an online system for booking cabs using a mobile application. The application will help users book cabs using GPS technology for tracking the current location of users and drivers. Additionally, it will enable users to communicate with drivers and make payments. The system will be effective in managing users and drivers efficiently. The proposed system will help users save time and make booking cabs more efficient and effective. The results of this research will show that it is possible to develop a reliable application for booking cabs using a mobile application for modern transportation needs.

## I. INTRODUCTION

An online cab booking application is being developed as an alternative to inefficient manual methods of booking an online taxi, which is a user-friendly, easily accessible way for passengers to book rides. This cab application will help reduce long waiting for passengers and increase the transparency between drivers and passengers as well as providing these features of real-time tracking using GPS, online bookings, and payment security. The cab booking application is designed to work efficiently for both passenger and cab administrator, by automating the booking process and being 100% available to users 24 hours a day.

The cab booking application also makes transportation easier for everyone, as it is a quick, safe, and simple method for users to schedule or instantly book a ride, making instant connections with nearby taxi drivers. This is accomplished with live tracking of the taxi ride and options for making secure payments from the user's bank account to the driver, as well as receiving accurate fare quotes and providing information about the taxi driver all in an effort to make transportation safe, reliable, and seamless. From your regular commute to work to catching an airport transfer to a city tour, the cab booking app makes transportation fast, smart, and easily within reach for everyone.

## II. LITERATURE REVIEW

Research has been conducted to develop online cab booking systems to enhance the efficiency of transportation systems. Sowjanya Reddy Mallreddy and Santhosh Vaddepally (2019) have proposed an online car booking system. In the proposed system, the user is allowed to book the cab online by accessing the website. The system highlights the significance of modernizing the conventional taxi system. Irene Elsa Mani (2018) has conducted a research study on online cab services w.r.t. the Trivandrum district. In the study, the researcher has emphasized the significance of customer satisfaction and service quality. Moreover, the researcher has also highlighted the difficulties experienced by the user in real-time.

Saibal Kumar Saha, Jupitara Kalita, and Sangita Saha (2018) have analyzed the perspectives of the consumers regarding the cab services. In the study, the researcher has highlighted the significance of the price of the cab service. Zamin Ali Khan et al. (2019) have proposed a taxi booking mobile application. In the proposed system, the user is allowed to track the cab online. The system highlights the significance of mobile technology. M. Adeel and N. M. Malik (2017) have designed and implemented a location-based taxi booking system by using GPS technology.



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### III. RESEARCH METHODOLOGY

This section presents a description of the methodology adopted for the design, development, and implementation of the Cab Booking Application.

#### 3.1 System Overview

The overview of the Cab Booking System indicates that it is designed as a mobile application through which users are able to book cabs efficiently and effectively. The system helps users locate nearby drivers and track their journey in real time. It also helps drivers get ride requests and navigate their way to the location of the passengers.

#### 3.2 Software Components

The application will be developed by utilizing Android Studio as the development environment, Flutter or Java as the coding platform, and Firebase database for storing user and ride information. Location services will be integrated by utilizing Google Maps API for tracking the cab in real time.

#### 3.3 Working Methodology

The application will function in a simple step-by-step manner. First, the user will launch the application and input the pick-up and drop locations. The system will then locate the current location of the user by utilizing GPS and display the list of nearby drivers who are available. Then, the user sends a ride request, and the driver receives the request from the application. Once the driver accepts the request, the user can track the cab in real time. Finally, the fare will be calculated after the ride, and the payment can be made by the user through the application.

#### 3.4 System Architecture

The design of the cab booking app is made up of a number of modules that work together to provide an efficient and seamless transportation service to users. These modules are as follows: User Interface, API Gateway, Back End, and Database Management. Passengers and drivers use the cab booking app via a mobile app on their phone. Passengers can set their pick-up and drop-off points, see nearby drivers, and book rides, while Drivers can click on ride requests to accept or reject them, and then navigate to pick up passengers. The application communicates with the back end via an API Gateway, which is responsible for managing all incoming and outgoing requests, as well as providing secure communications between the Client Application and Back End services. Backend services include User Service, Ride Booking Service, Driver Management Service, Payment Service, and Location Tracking Service. Each service manages processes related to user registration and ride requests, assigning the correct driver, calculating fare amounts, and tracking real time GPS data of the passenger. User profiles, Driver profiles, ride history, and payment records all reside in the Database system. Additionally, there is a Notification Service or Messaging Queue that will provide real time notifications of ride confirmation, driver arrival, and trip status to the end users.

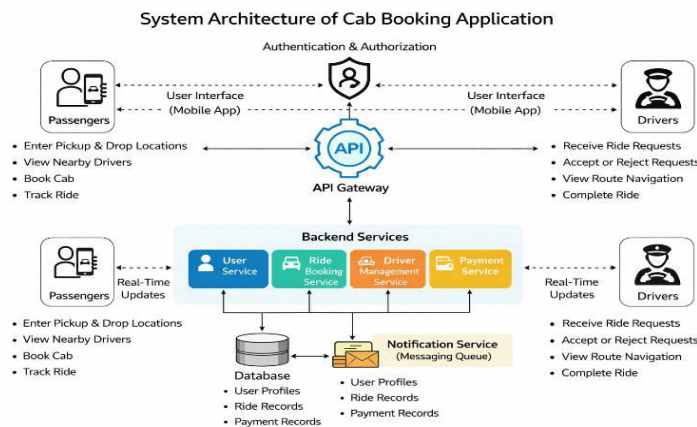


Fig 3.5: System Architecture



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### IV. RESULTS AND DISCUSSION

The performance assessment of the developed cab booking application was conducted through testing which evaluated its functional capabilities. Users can successfully book rides while viewing nearby drivers and tracking cab locations through the system. Drivers can use the driver module to receive ride requests, accept bookings, and navigate their way to the passenger's location. The results show that the application reduces the time required to find transportation and improves communication between passengers and drivers. Users achieve better convenience and safety through the combination of GPS and map services which deliver accurate route navigation and real-time tracking. The system maintains dependable performance for handling ride requests and driver assignment and trip monitoring. The application offers an easy-to-use interface which helps to make urban transportation services more effective.

### V. APPLICATIONS

- Facilitates easy and quick booking of cabs through a mobile application
- Facilitates users in finding nearby cabs through GPS technology
- Suitable for daily commuters, students, office goers, and travelers
- Facilitates secure digital payment options for cashless transactions
- Helps drivers in receiving ride requests and earning more
- Helps in saving waiting time and increasing transportation efficiency

### VI. CONCLUSION

The conclusion of a cab booking system development should summarize the successes of the user-friendly, efficient and reliable system, as well being able to meet the objectives of the project as it relates to enhancing the customer experience, real-time tracking and secure payment functionality. This conclusion should also illustrate the performance, functionality and long-term scalability and/or the ability to connect to other applications of the cab booking service.

### VII. FUTURE SCOPE

The functionality of the Cab Booking Application can be further enhanced by adding more sophisticated features such as:

- Graphical reporting and analysis for ride history and usage patterns
- Cloud storage for data backup and access
- Integration of digital wallets and payment gateways
- AI-based allocation of drivers and optimization of routes

All of this will make it more efficient and user-friendly for future smart transportation needs.

### VIII. ACKNOWLEDGEMENT

The research work which I conducted at the Department of Computer Engineering received vital support from the faculty members and mentors. The research on the Cab Booking Application System reached its completion through their suggestions and ideas and technical assistance. My institution deserves my gratitude because it supplied all the essential resources and facilities which I needed to conduct my research project. The institution's support proved essential for my research work which examined the Cab Booking Application system.

### REFERENCES

- [1] Sowjanya Reddy Mallreddy and Santhosh Vadde pally, "Car Booking Systems Through Online," JETIR, Volume 6, Issue 2, February 2019.
- [2] Zamin Ali Khan et al., "Taxi Booking Mobile Application," International Journal of Computer Science and Mobile Computing, Volume 8, Issue 11, 2019.
- [3] M. Adeel and N. M. Malik, "Design and Implementation of a Location-Based Taxi Booking System," Journal of Computer Science, Volume 15, Issue 12, pp. 1626–1634, 2017.
- [4] Irene Elsa Mani, "Study on Online Cab Services with Special Reference to Trivandrum District," JETIR, Volume 5, Issue 9, September 2018.



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