

ONLINE CAB BOOKING SYSTEM

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ABSTRACT

Online Cab Booking Management System is developed to manage all cab hiring work online. It useful for car booking agency that are specialized in Hiring cabs to customers. Using this system many cab-booking agencies are moving ahead to become a pioneer in the vehicle rental industry by completely focusing on customers. Using this system, it is very easy for customer to book a car online and cab-booking agency can also track their booking online. So, it is also very useful for car booking agency. It is an online system through which customers can view available cabs; register the cabs, view profile and book cabs. Mostly peoples use cab service for their daily transportations need. Cab booking agency can also check which car is free for booking and which cars are on booking at present time. The objective and scope of my project Online Cab or Cab booking System is to record the details various activities of user. It will simplify the task and reduce the paper work. Using this car booking management system car owner can also become partner of car booking agency by giving their car for booking. Online Car rental management system is a web-based application that allow users to book a car online. From this system car rental company can manage all car bookings and customer information. User can book cars and admin can confirm the booking and cancel the booking on the basis of availability of the cars and drivers. We have developed this system to produce a web-based system that allow customer to register and reserve cab online and for the company to effectively manage their Cab hiring business. Presently car booking agency do all work offline when a customer comes to them, they take the booking order and call the car driver to check their availability with their car if they manage to find a car for booking, they confirm the order otherwise they cancel the order as they have no car for the booking. This process wastes a lot of time of customer and also of car booking agency and it also give bad name to the agency but with our system car agency can confirm the order within a minute by checking the availability of cars for booking. So, this car booking system is helpful to ease customer's task whenever they need to rent a cab or hire a cab. The proposed Online Cab Booking project system ensures that the users can book the cab as 1`manage their bookings and cancel their bookings at any point of time. The users will get notified about the driver and his mobile no. so as to communicate with him. Regular updates are provided to the customer so that they are aware of their bookings, driver details, and booking status. The user can also drop in their suggestions or queries in the feedback form.

1 INTRODUCTION

The introduction of smartphones and the galore of apps have changed the way we led our lives. Taxi booking apps have created a stir in how the traditional taxi business industry worked. Famous names like Uber and Ola have already shown the way to a lucrative market for private transportation. In 2015, Uber had one million users using it daily in over 60 different countries. In the U.S. alone, there are more than 160,000 Uber drivers – a testimony to how popular taxi booking services could be.

You can easily build a taxi booking app for your taxi fleet. It is possible to hire an app developer or app development company to get an app made just for you. All the required features and functions of top-notch taxi apps are available to be customized and made into your own app.

People must be thinking making an online taxi booking software will require an additional software for content management. But you will be happy to know that this is not the reality. It does not matter which platform you are developing the app for.

APIs are a great way to adapt an app to the platform. The internal settings and configurations of the mobile app can attune the application for the device and platform it is aimed for. We will be able to provide our requirements and add the features we want in our app. It is a great way to make a unique app that gets everybody's attention in this competitive market.

ADVANTAGES OF CAB BOOKING APP

There are outstanding advantages your business, drivers, and passengers can get by using taxi booking apps.

- Drivers do not need to drive around searching for passengers.
- Payment can be made in cashless ways, so drivers do not need to carry huge amount of cash with them.
- Unruly passengers can be identified when drivers provide negative ratings on the app
- Exact location of the passenger eliminates unnecessary time wasting
- Cabs can be hired instantly without even going out of the home.
- Passengers can get updates cab location and their approximate arrival time.
- Passengers find it convenient to book cabs without waiting on the road and refusal
- Taxi booking apps will help your business grow by drawing in more passengers.

The time is right for your taxi business to develop a dedicated taxi booking app for your organization. The traditional taxis are losing out in competition against the companies with their own taxi booking app. It is really simple to get a great taxi app at an affordable price for extending and growing your business.

2. LITERATURE SURVEY AND RELATED WORK

An online cab booking system is a digital platform that allows users to book transportation services, primarily cabs or taxis, through the internet or a mobile application. It simplifies the process of reserving a cab by providing a user-friendly interface for customers and streamlining operations for cab service providers. Key components of such a system typically include:

User Registration: Customers create accounts with their details, including name, contact information, and payment methods.

Cab Listings: The system displays available cabs with details such as type, capacity, and fare.

Booking: Users can select a cab, choose pickup and drop-off locations, and confirm the booking.

Real-time Tracking: The system provides real-time tracking of the cab's location, allowing users to monitor its arrival.

Payment Processing: Online payment options are integrated for convenient and secure transactions.

Notifications: Users receive booking confirmations, driver details, and trip updates via notifications.

Driver Management: Cab drivers register on the platform, accept bookings, and update their availability.

Reviews and Ratings: Users can rate and review their cab ride experience, helping others make informed choices.

Admin Panel: Operators manage the system, monitor bookings, and handle customer support.

Analytics: Data analytics tools may be used to analyze user behavior, improve service quality, and optimize routes.

Benefits of an online cab booking system include convenience for users, increased business for cab operators, reduced wait times, and improved efficiency in the transportation industry. Such systems have become an integral part of modern urban mobility, offering a seamless and reliable way to book and use cab services.

2.1 INTRODUCTION

Define what online cab booking systems are and their significance.

Briefly discuss the evolution and growth of these systems.

User Experience and Interface Design:

Explore studies related to user interface design and user experience in online cab booking platforms.

Investigate how a user-friendly interface impacts user adoption and satisfaction.

Technological Aspects:

Review research on the technology stack used in cab booking systems.

Analyze scalability, security, and reliability considerations.

Business Models and Competition:

Examine research on the business models of online cab booking companies.

Compare different platforms and their competitive strategies.

Customer Behavior and Preferences:

Investigate studies on customer behavior when using online cab booking services.

Analyze factors influencing customer preferences and choices.

Operational Efficiency:

Explore research on optimizing route planning and fleet management.

Discuss studies on reducing wait times and increasing efficiency.

Regulations and Legal Issues:

Review literature on regulatory challenges and legal issues faced by online cab booking companies.

Analyze the impact of local regulations on the industry.

Send a message

2.2 RELATED WORK

A literature survey on related work in the field of online cab booking systems would typically involve reviewing academic papers, articles, and industry reports. Since I can't perform comprehensive searches or access external databases, I can provide you with a brief overview of some common themes and topics that researchers and experts have explored in this area up to my last knowledge update in September 2021:

User Experience and Interface Design: Many studies have focused on improving the user experience of online cab booking platforms.

This includes research on user interface design, mobile app usability, and accessibility features.

Route Optimization and Pricing Models: Researchers have explored algorithms for optimizing cab routes to reduce travel time and cost.

Additionally, pricing models, surge pricing, and dynamic pricing strategies have been subjects of interest.

Driver Behavior and Performance: Some studies delve into driver behavior analysis, driver rating systems, and strategies for enhancing driver performance and safety.

Safety and Security: Ensuring passenger safety in online cab booking systems has been a concern. Researchers have investigated safety features, background checks for drivers, and emergency response systems.

Sustainability and Environmental Impact: With growing environmental concerns, there's research on the environmental impact of ride-sharing services and strategies to reduce carbon emissions.

Market Analysis and Competition: Industry reports often analyze the competitive landscape of online cab booking platforms, market trends, and customer preferences.

Regulatory and Legal Issues: Research also covers the regulatory challenges and legal issues associated with ride-sharing services, including compliance with local transportation laws.

3 EXISTING SYSTEM

This system developed under four lead entities. This Project is based on MEAN stack Technologies.

4 PROPOSED WORK AND ALGORITHM

User Registration and Authentication:

Users should be able to create accounts and log in securely.

Verification methods, such as email or phone number, can enhance security.

Booking a Ride:

Users should be able to enter their pickup and drop-off locations.

The system should provide options for choosing the type of vehicle (e.g., sedan, SUV, luxury).

Real-time availability and estimated fares should be displayed.

Driver Matching:

The system should match users with available drivers based on proximity and vehicle type.

Users should receive driver details (name, photo, vehicle info) and ETA.

Tracking and Notifications:

Users should be able to track the driver's location on a map.

Real-time notifications (driver arrival, trip start, trip end) should be sent to users.

Fare Calculation and Payment:

The system should calculate the fare based on distance, time, and any additional charges.

Multiple payment options (credit/debit cards, digital wallets, cash) should be supported.

Ratings and Reviews:

Users should be able to rate drivers and leave reviews after a trip.

Driver Management:

Drivers should be able to register and provide necessary documentation.

Admins should approve and manage driver accounts.

Admin Dashboard:

An admin panel for managing users, drivers, and resolving disputes.

Tools for setting pricing, promotions, and monitoring system performance.

Safety Features:

An SOS button for emergencies.

Background checks and verification for drivers.

Two-factor authentication for added security.

Booking History:

Users should have access to their ride history and receipts.

Localization:

Support for multiple languages and currencies.

Availability in different regions/countries.

Analytics and Reporting:

Collect and analyze data to improve services and make data-driven decisions.

Customer Support:

In-app chat or customer support hotline for assistance.

Marketing and Promotions:

Offer discounts, promo codes, and loyalty programs.

Mobile Apps and Website:

Develop user-friendly mobile apps (iOS and Android) and a responsive website.

Integration:

Integration with payment gateways, mapping services (e.g., Google Maps), and messaging platforms.

Legal and Regulatory Compliance:

Ensure compliance with local transportation regulations and data protection laws.

Future Enhancements:

Plan for scalability and potential future features like carpooling or electric vehicle options.

Remember to conduct market research and feasibility studies to refine your proposed system and identify your target audience's needs. Additionally, prioritize data security and privacy to build trust with users.

5 METHODOLOGIES

MODULES

TYPES OF TESTING

WHITE BOX TESTING

White box testing, sometimes called glass box testing is a test case design method that uses the control structure of the procedural design to derive test cases. Using white box testing methods, the software engineer can derive test cases that. Guarantee that all independent paths within a module have been exercised at least once.

- Exercise all logical decisions on their true and false sides.
- Execute all loops at their boundaries and within their operational bounds.

- Exercise internal data structure to assure their validity.

White box testing was performed at all levels of development of I-Admit. The coding team took all care to test the code and guarantee that it meets all the specifications as well as logically correct. All loops were tested and all internal data structures evaluated and verified.

BLACK BOX TESTING

It focuses on the functional requirements of the software. That is black box testing enables the software engineer to derive sets of input conditions that will fully exercise all functional requirements for a program. Black box testing is not an alternative to white box techniques. Rather it is a complementary approach that is likely to uncover a different class of errors than white box methods. Black box testing attempts to find errors in their following categories

- Incorrect or missing functions
- Interface errors
- Errors in data structures or external data base access
- Performance errors
- Initialization and termination errors.

Unlike white box testing, which is performed early in the testing process, black box testing is to be applied during later stages of testing.

Black box testing was performed with the application code of the software being developed to verify that it is functionally correct and gives appropriate output at different situations of inputs. It was also verified that the software takes a good care of exceptional conditions and errors are handled well and that the software does not crash.

A strategy for software testing integrates software test case design methods into a well- planned series of steps that result in the successful construction of software. In many ways, testing is an individualistic process, and the number of different types of tests varies as much as the different development approaches.

UNIT TESTING

Unit testing focuses verification effort on the smallest unit software design- the module. Using the procedural design description as a guide, important control paths are tested to uncover errors within the boundary of the module.

The module interface is tested to ensure that information properly flows into and out of the program unit under test. The local data structure is examined to ensure that data stored temporarily maintains its integrity during all steps in algorithmic execution.

Boundary conditions are tested to ensure that the module operates properly at boundaries

Established to limit or restrict processing.

All independent paths (bases paths) through the control structure are exercised to ensure that all elements in a module have been executed at least once. And finally, all error-handling paths are tested.

Application interface of our system was unit tested at all levels of implementation, right from start of code writing, to integrating the code with other modules. Every module was tested fully to check its syntax and logical correctness. Error handling was implemented into relevant modules so that the code doesn't crash on errors.

INTEGRATION TESTING

Integration testing is a systematic technique for constructing the program structures, while conducting test to uncover errors associated with interfacing, the objective is to take unit tested modules and build a program structure that has been dictated by design. User interface of i-Admit was developed in modules.

All of them were joined together to make the complete running application. While integrating these modules, integration testing was performed on them to verify that they meet all interfacing requirements and that they pass relevant information among themselves. In the end the complete program structure was tested to ensure interoperability of all the modules.

VALIDATION TESTING

At the culmination of integration testing software is completely assembled as a package: interfacing errors have been uncovered and corrected and a final series of software tests – Validation Testing may begin. Validation can be defined in many ways, but a simple definition is that validation succeeds when software functions in a manner that can be reasonably expected by the customer. Software validation is achieved through a series of Black Box tests that demonstrate conformity with requirements.

6 RESULTS AND DISCUSSION

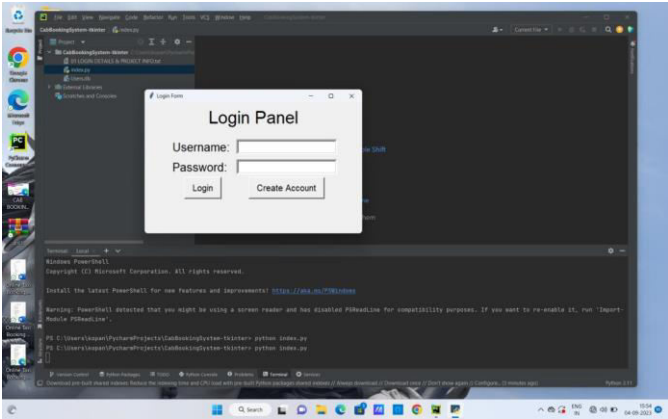


Fig1: Login Panel

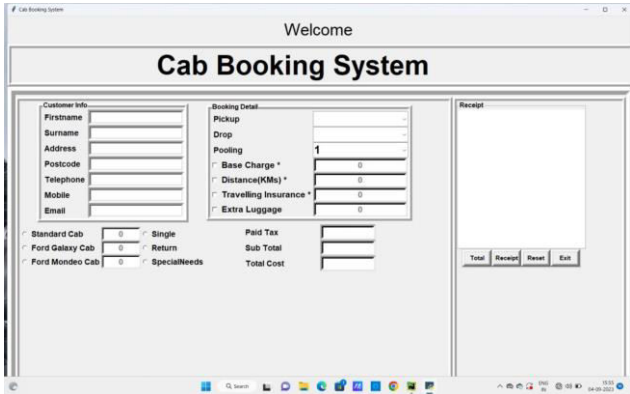


Fig 2: Welcome Page

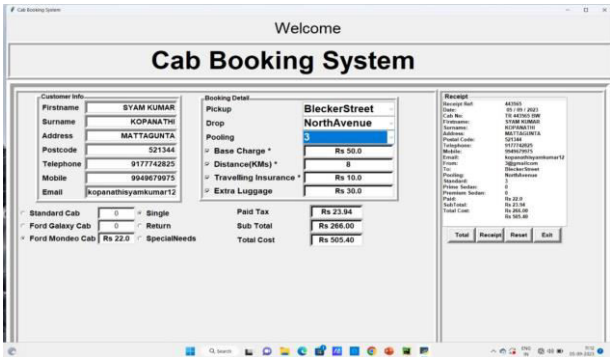


Fig 3: Cab Booking System Final Page

7.CONCLUSION AND FUTURE SCOPE

The conclusion of an online cab booking system is that it provides convenient, efficient, and accessible transportation solutions for users. It has transformed the way people travel, making it easier to book rides, track drivers, and make payments.

As for future scope, it's likely to continue evolving with advancements in technology:

Autonomous Vehicles: Integration of self-driving cars into the system could reduce costs and increase safety.

Eco-Friendly Options: More focus on eco-friendly vehicles like electric or hybrid cars to address environmental concerns.

Global Expansion: Expanding services to new regions and countries can tap into growing markets.

Integration with Public Transit: Seamless integration with public transportation for multi-modal travel. Enhanced Safety

Measures: Continued focus on passenger safety, including real-time monitoring and emergency response features.

Data Analytics: Utilizing data for predictive analytics to optimize routes, pricing, and customer experiences.

Partnerships: Collaborations with other service providers such as airlines, hotels, or tourist attractions for integrated travel experiences.

Customer Experience: Further enhancing the user interface, payment options, and loyalty programs.

Regulatory Challenges: Adapting to changing regulations and ensuring compliance with local laws.

In conclusion, the future of online cab booking systems holds exciting possibilities for improved transportation services, enhanced user experiences, and sustainable practices.

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