

Car Rental Web Application

Author: Sadhana K

This study explores a web-based car rental application development and implementation, emphasizing how it's meant to improve customers' experience and performance. Applications have user registrations, online booking, viewing bookings, viewing past rental history, and viewing invoices and receipts, whereas administrator operations include managing vehicles, managing bookings, modifying prices, and building a system for administrators to run in a single console or interface. Software applications were built using PHP, MySQL, HTML, CSS, and JavaScript. To be more efficient, Frameworks such as Bootstrap and Foundation were used for responsive designs. Some Examples of innovations that enhanced the user experience are real-time availability of vehicles, automatic record keeping, establishing codes for user identification, and making the application mobile responsive. The value of applications also exists in the automation of the rental process and handling of data handling. These applications also greatly reduce/digitize the traditional manner in which to rent vehicles.

The study on web-based car rental systems provides an excellent foundation for understanding the positive aspects of transitioning the rental process to a digital solution using features like online booking, admin access, and user accounts. Given these base ideas, our suggested project aims to take these ideas a step further towards a more advanced, mobile solution by deploying AI features and enabling multi-vehicle rentals across different vehicle categories. While the previous systems employ primarily traditional web technologies, we researchers would be using Flutter for mobile deployment and React for the admin web panel to ensure better responsiveness, cross-platform capabilities, and UI. This shift towards a smarter and AI-supported platform shows our ambitions to move beyond the previous systems and offer a personalized, efficient, and more accessible car rental experience for both users and admins.

Car Rental and Tracking Web-Based System using GPS

Authors: Osman A Nasr, M. Miladi, Mohammad Ahmed

This study details a website-based car rental and tracking system designed to improve efficiency and access to temporary mobility. With appropriate recognition of the rising need for convenient mobility solutions, particularly for users in temporary or remote environments, the study focused on the efficient coordination and delivery of vehicles to our customers from the perspective of both the customer and the rental agency. This website-based platform was developed using Agile and WebML methodologies and includes tools necessary for the efficient management and delivery of services. Customers are able to reserve vehicles online, and rental agency owners have control over the provision of services. The project also integrated the use of GPS tracking technology for the purpose of providing real-time visibility, control, organization, and administration of rented vehicles to legitimate rental car companies. By leveraging reusable components to facilitate service and delivery electronically, the proposed platform seeks to improve the quality, efficiency, and security of car rental organizations.

The existing study on web-based car rental and tracking system utilizing GPS technology, and the study identified important aspects of utilizing digital, connected services to implement real-time vehicle tracking that enhanced the car rental experience for customers and agencies alike. Our proposed project builds on this system by refining aspects of vehicle rental and delivery from a more modern mobile-first perspective, utilizing AI, all types of vehicles, and applying Flutter for mobile and React for the administration panel. We also plan to track rented vehicles with GPS tracking features, which gives more security and control over rented vehicles. Our proposal combines many of these technologies with a user-centered design, representing an evolution of the original system into an even more intelligent, flexible, and efficient car rental interface.

Design Android-Based Car Rental Management Application Using Prototype Method

Authors: Naufal Fikri Aulia, Feri Candra

The focus of this study is to develop an Android-based car rental management system that will eradicate the inefficiencies in the manual car rental processes used at Inayah Car Rental in Pekanbaru, Riau. The current manual system, which involves notarized and written documents and physical storage of customer data and guarantees, creates risks related to a loss of data, damaged documents, and uncertainty in bookings. To address the previously mentioned weaknesses, the researchers introduced a mobile application, developed using a prototype method, which was heavily reliant on user participation while developing the application which resulting in an automated system to record rental transactions, record data more effectively, and provide more certain reliability of service. WinTech 1501 Evaluator conducted an assessment using the ISO 25010 quality standard that indicated an inherency in functionality, security, usability, efficiency, and many other quality attributes, which, when administering a car rental service, provided a more feasible and reliable management system through a mobile application.

The existing research on Android car rental management application targeting the elements of manual component use, loss or maintaining customer records, and the effects of last-minute cancellations - problems that often stop a normal rental service - all help reflect the justifiable reasons for the motivation behind our system where we aim to remove manual existing systems and improve on quality/reliability. Their solution uses a prototype method to introduce mobile automation; our project extends that method, which goes towards a complete cross-platform site using Flutter for mobile and React for the admin web site. This provides a target of accessibility and scalability.

Car Rental System

Author: Amey Thakur

The study explores how a fully integrated automated web-based solution to facilitate vehicle reservations. The system allows users to create an account and rent a car from anywhere in the world by entering personal and travel information online. The study shows how automating the traditional manual car rental procedure makes it easier for users and improves efficiency. The

system allows customers to enter preferences, such as vehicle type and rental location, for the car rental process, thus improving convenience and personalization in the car rental experience. The system is provided in three phases as provided in the introduction of the study.

The existing study presents a car rental system that automates vehicle reservations through a web platform, focusing primarily on manual process automation and global accessibility. However, it lacks several modern enhancements that are crucial for today's user expectations and operational efficiency. Our proposed project builds upon and significantly addresses the problems of the previous system, particularly its limited interactivity, lack of support for diverse vehicle options, and absence of real-time monitoring capabilities. By identifying and improving these shortcomings, our project aims to deliver a more dynamic, responsive, and user-centric rental experience that aligns with current technological and usability standards.

MOBILE-BASED APPLICATION DEVELOPMENT FOR CAR AND MOTOR RENTALS

Authors: Kevin Hendersen, Novando Santosa, Sally Septia Halim

The study explores how mobile applications have removed the inefficiency of traditional vehicle rental systems to a certain degree. It begins with an overview of the features that a mobile application can offer the customer, such as online booking and payment, real-time sale of vehicle availability, and strong administrative control over the vehicle and transactions. The research outlines the development options available (i.e., waterfall, prototype, and agile), and the different technologies available to develop the mobile application based on Android, in conjunction with PHP and REST APIs. The research considers that mobile applications represent efficiency in communication and transactions, providing better data security for customers, and more opportunities for the owners of the vehicles that have been put on the market. In conclusion, mobile-based rental applications generally improved customer experience and functioning systems, along with better customer satisfaction and the decline of difficulties related to traditional rental systems.

The study explores how the benefits of moving car and motor rental applications from manual pen & paper systems to electronic or mobile-based applications, demonstrating the benefits such as real-time availability, online payments, and better administrative control. However, while these studies with real-world implementations are resolving key issues found in traditional rentals, the mobile applications are mainly bringing traditional functionality without the additional enhancements of more intelligent functionality or how scalable the mobile applications could be for wider users. Our proposed project is building on these limitations by demonstrating the need for deeper interactivity, smarter automation, and a more dynamic user experience. It addresses limitations, for example, personalizing features, lack of AI-driven features, and simply a more flexible system. The project will rejuvenate the mobile rental system into a more contemporary, responsive, and intelligent place for a world changing as fast as the technology around us.