Project Title: Car Rental System

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Abstract

The **Car Rental System** is a user-friendly project designed to simplify the process of renting and returning vehicles. It allows customers to select, rent, and return cars efficiently while maintaining a record of transactions. Using java as the primary programming language, the system is built with features for secure data handling, seamless user interaction, and real-time updates on car availability. Key findings demonstrate that the project significantly reduces the manual workload, enhances rental processes, and improves user satisfaction. This project highlights the integration of basic software engineering principles into practical application.

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Introduction

The **Car Rental System** addresses the increasing demand for streamlined car rental services. By automating the booking, renting, and returning process, it simplifies management for businesses and enhances user convenience. The project aims to replace traditional manual methods with a more reliable and scalable digital system.

Problem Statement

Traditional car rental systems rely heavily on manual paperwork and lack efficiency. This can result in errors, delays, and customer dissatisfaction. The **Car Rental System** automates this process, ensuring accuracy, transparency, and time-saving for both customers and service providers.

Literature Review

Previous Research

Prior systems have focused on creating standalone applications for rental services. Some emphasize data storage using databases, while others highlight user interface design.

Research Gaps

Existing systems lack real-time car availability updates, user-centered design, and scalability. This project bridges these gaps with a streamlined, efficient framework.

Methodology

7.1 Design and Framework

The project uses a modular structure with separate functionalities for car management, user interaction, and transaction handling.

7.2 Tools and Technologies

- **Programming Language**: JAVA
- **Database**: SQLite
- **Development Environment**: VS Code

7.3 Data Collection and Analysis

Car inventory data was prepared manually for the project. Data cleaning ensured accuracy, while analysis focused on performance metrics.

7.4 Implementation Steps

1. Designing the car inventory module.
2. Developing rental and return functionalities.
3. Integrating a confirmation system for transactions.
4. Testing and debugging.

Results and Discussion

The project successfully automates the car rental process, reducing error rates and improving user satisfaction. Key performance metrics include transaction speed and system accuracy.

Conclusion

The **Car Rental System** demonstrates the practical application of programming in solving real-world problems. It is efficient, scalable, and user-friendly, addressing the challenges of traditional systems.