

Car Rental System

Akash Dyaneshwar Jadhav¹, Shubham Tukaram Kale²

^{1,2}*Department of Electronics and Computer Engineering Chh. Sambhajanagar, India*

Abstract—The Car Rental Management System is a web-based application designed to automate and simplify vehicle rental operations. The system provides an online platform for customers to search available vehicles, book cars, manage reservations, and perform secure transactions. Developed using Python, Flask, PostgreSQL, HTML, CSS, and Bootstrap, the system improves operational efficiency and enhances customer satisfaction.

I. INTRODUCTION

The Car Rental Management System automates rental operations by allowing customers to browse vehicles, make reservations online, and track bookings. Administrators can efficiently manage cars, customers, and transactions through a centralized platform.

II. OBJECTIVES

- Automate the car rental process.
- Provide online vehicle booking.
- Maintain customer and vehicle records.
- Reduce paperwork.
- Generate reports.

III. MODULES USED

- User Registration and Login
- Vehicle Management
- Car Booking Module
- Customer Management
- Payment Management
- Admin Dashboard

IV. SYSTEM ARCHITECTURE

1. User Interface → Customer/Admin Dashboard
2. Application Layer → Flask Backend
3. Database Layer → PostgreSQL Database

V. METHODOLOGY

1. Customer logs in.
2. Searches available cars.
3. Selects and books a vehicle.
4. Booking details are stored in the database.
5. Admin manages bookings and vehicles.

VI. RESULTS AND DISCUSSION

The system successfully automates vehicle booking, stores customer information securely, displays real-time vehicle availability, and simplifies administrative tasks.

VII. ADVANTAGES

- User-friendly interface
- Reduced paperwork
- Faster booking process
- Secure data management

VIII. FUTURE SCOPE

- Online payment integration
- Mobile application
- GPS tracking
- AI-based recommendation system

IX. CONCLUSION

The Car Rental Management System provides an efficient platform for automating vehicle rental operations, reducing manual effort and improving customer experience.

REFERENCES

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