

Introduction:

The Car Rental Database Management System (DBMS) is designed to support the operational and administrative functions of a modern car rental business. Its primary purpose is to streamline the management of vehicle fleets, customer transactions, employee assignments, maintenance scheduling, and branch operations through a structured and relational data model. By centralizing key business entities—such as rentals, payments, maintenance records, customers, employees, cars, branches, and pricing categories—the system enables efficient data retrieval, reporting, and day-to-day decision-making.

Purpose of the system:

This DBMS helps with :

- *Rental Management: Tracking vehicle bookings, returns, and billing.*
- *Customer Relations: Storing customer details, rental history, and contact information.*
- *Fleet Maintenance: Scheduling and recording vehicle servicing to ensure safety and availability.*
- *Payment Processing: Logging transaction details, methods, and amounts.*
- *Branch Operations: Managing inventory and staff across multiple locations.*
- *Pricing Strategy: Applying category-based daily rates to different car models.*

Assumptions:

The system design assumes:

- *Each rental is linked to one customer, one car, one employee, and one branch.*
- *Payments are associated with specific rentals.*
- *Maintenance records are tied to individual vehicles.*
- *Cars are assigned to a specific branch and category.*
- *Employees work at a single branch.*
- *Pricing is determined by car category (daily_price).*
- *Overdue returns are tracked via actual_return_date versus return_date.*

Data stored :

The system stores the following core data entities:

- *Customers: Personal details, driver's license, contact information.*
- *Employees: Names, positions, and branch assignments.*
- *Cars: Make, model, year, mileage, status, and assigned branch/category.*
- *Rentals: Dates, duration, associated customer/car/employee, and total amount.*
- *Payments: Date, amount, method, and linked rental.*
- *Maintenance: Service dates, descriptions, costs, and next due dates.*
- *Branches: Location details (city, address).*
- *Car Categories: Classification and daily rental rates.*