Car Rental Business Requirements

Vehicle management business requirement (implemented)

1. The system shall allow retrieval of detailed vehicle information, including make, model, year, and license plate, based on a unique identifier.
2. it should provide insights into the vehicle's maintenance history, displaying maintenance dates and descriptions, inspection records with dates and comments, and any feedback from customers.
3. Ensuring data integrity and optimizing query performance are essential for accurate and efficient retrieval of vehicle profiles.

Location Business requirement. (implemented)

4. The system should facilitate the retrieval of vehicle details, including the vehicle's make, model, build year, and current location based on a unique identifier.
5. Integration with the inventory management module enables tracking of each vehicle's current location stored in the inventories table, ensuring accurate and up-to-date information for fleet management.
6. Ensuring data consistency and reliability is crucial for providing real-time insights into vehicle availability and location for efficient rental operations.
7. The system should calculate the total revenue generated from reservations for each location during the year 2024.(current year)

Reservation And booking business requirement

8. Allow customers to make reservations for specific vehicles specifying the pickup and return dates.
9. Access booking system to customer to confirm reservation, make payment and receive booking confirmation
10. Manage booking schedules like overbooking , cancellation and modifications made by both users and customers.

Customer management Business requirement (implemented)

11. The system should be able to obtain customer details, including the customer's full name, associated booking and reservation IDs, as well as vehicle make, model, and the end date of the reservation.
12. Incorporating a parameter for the vehicle makes filtering of results based on specific vehicle manufacturers, enhancing flexibility in querying customer data.
13. Ordering the results by customer full name in descending order provides a structured view for analysis or presentation purposes.

14. The system should retrieve customer details including their name, email, phone number, and address, along with the make and model of the vehicle associated with their booking.
15. The system should retrieve rental details for a customer based on their phone number, including the vehicle make, model, rental start date, rental end date, rental location, total cost, and rental status.

Insurance Business requirements(implemented)
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16. Provide a display of insurance details , policy and the premiums amount for the customer during the reservation or booking and get their consigns.
17. The system shall retrieve details about vehicles and their associated insurance information.

Maintenance Business requirements(implemented)
18. Store and record the maintenance activities along the routine inspection of each car in the rental database.
19. System should alert when it's time for a car routine maintenance as it is recommended by the manufacturer of the vehicle.
20. The system should retrieve details of vehicles requiring maintenance, including their ID, make, model, and the date of the last maintenance.
21. System should enables proactive maintenance scheduling by identifying vehicles that have not undergone maintenance in the last 90 days

Rental Payment and invoice requirements. (implemented)
22. The system shall aims to determine the vehicle with the lowest or highest revenue by computing the total sum of invoice amounts for each vehicle
23. It concatenates the make and model of each vehicle to enhance presentation. By ordering the results in ascending order based on the total sum and limiting the output to one record, users can easily identify the vehicle with the lowest or highest revenue.
24. The system should compute the total revenue generated by each vehicle make, enabling analysis of revenue contribution by different vehicle brands
25. The system should calculate the average rental duration in days for each vehicle make, providing insights into the typical rental period for vehicles of different brands.
26. The system should retrieve overdue booking details, including customer name, email, phone number, address, booking start date, booking end date, and payment status

Inventory Management Business requirement.(implemented)
27. The system shall aim to provide insights into rental demand for each vehicle made by counting the number of times each vehicle made has been rented.
28. Retrieve details about vehicles rented out to customers within the current date range, including the vehicle make, model, and year, along with the customer's full name and the rental start and end dates.

Analytical and reporting Business requirements . (implemented)

1. The system should provide a comprehensive view of revenue generation by calculating the total sum of invoice amounts for each vehicle.
2. To enhance readability and understanding, it should concatenate the make and model of each vehicle. By organizing the results based on vehicle ID and ordering them in descending order according to the total sum, the system enables users to identify the vehicle contributing the most to revenue.
3. Limiting the output to one record ensures focus on the vehicle with the highest revenue.
4. The system should compute the total revenue generated by each vehicle make, enabling analysis of revenue contribution by different vehicle brands