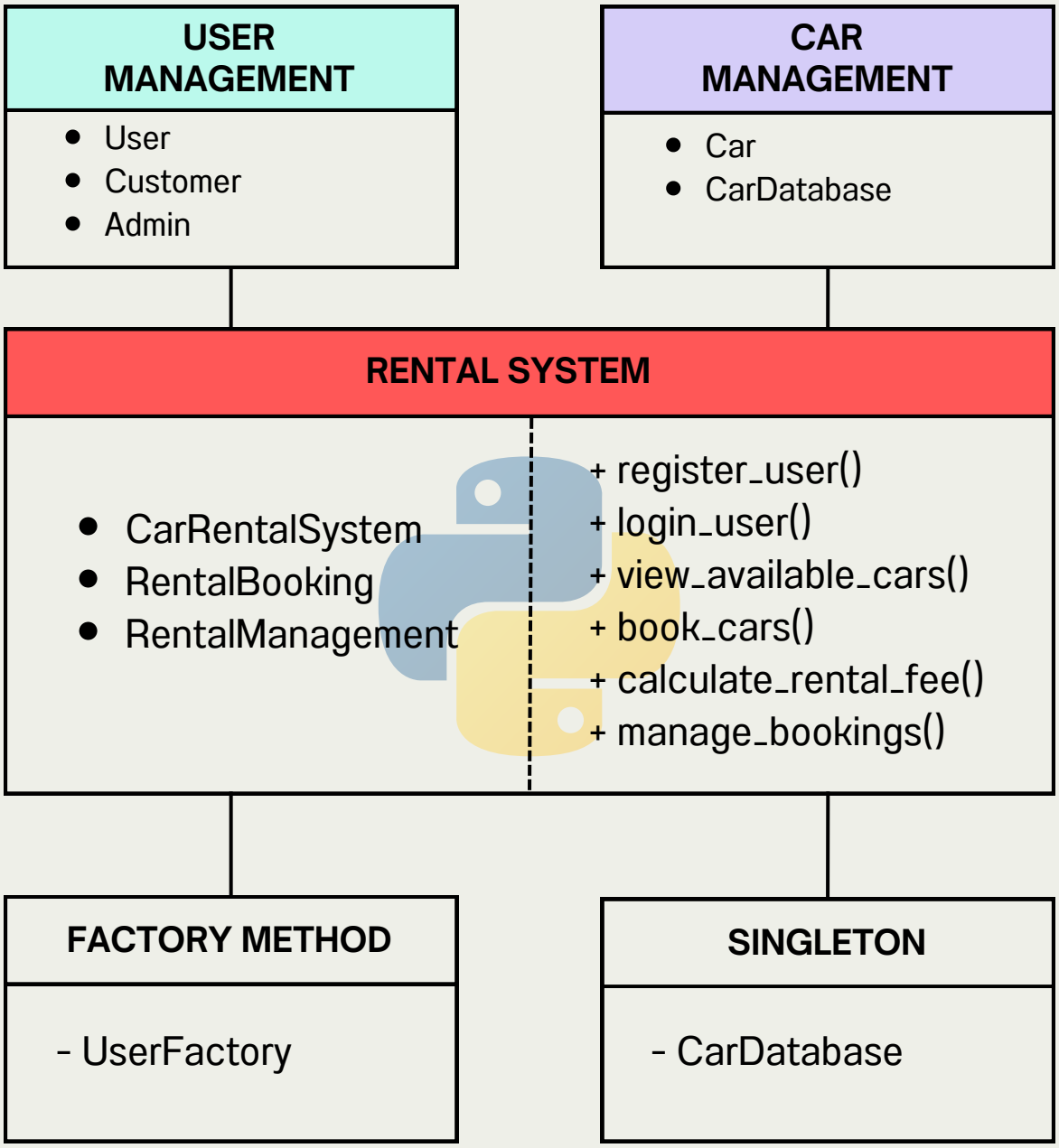
ARCHITECTURAL DIAGRAM



DESCRIPTION OF EACH COMPONENT

User Management:

- User: Base class for user with common attributes (e.g., username, password).
- Customer: Inherits from User, has customer-specific attributes and methods.
- Admin: Inherits from User, has admin-specific attributes and methods.

Car Management:

- Car: Represents a car with attributes (ID, make, model, year, mileage, availability, min/max rent period).
- CarDatabase: Singleton class that manages the database of cars, allowing addition, update, and deletion of car records.

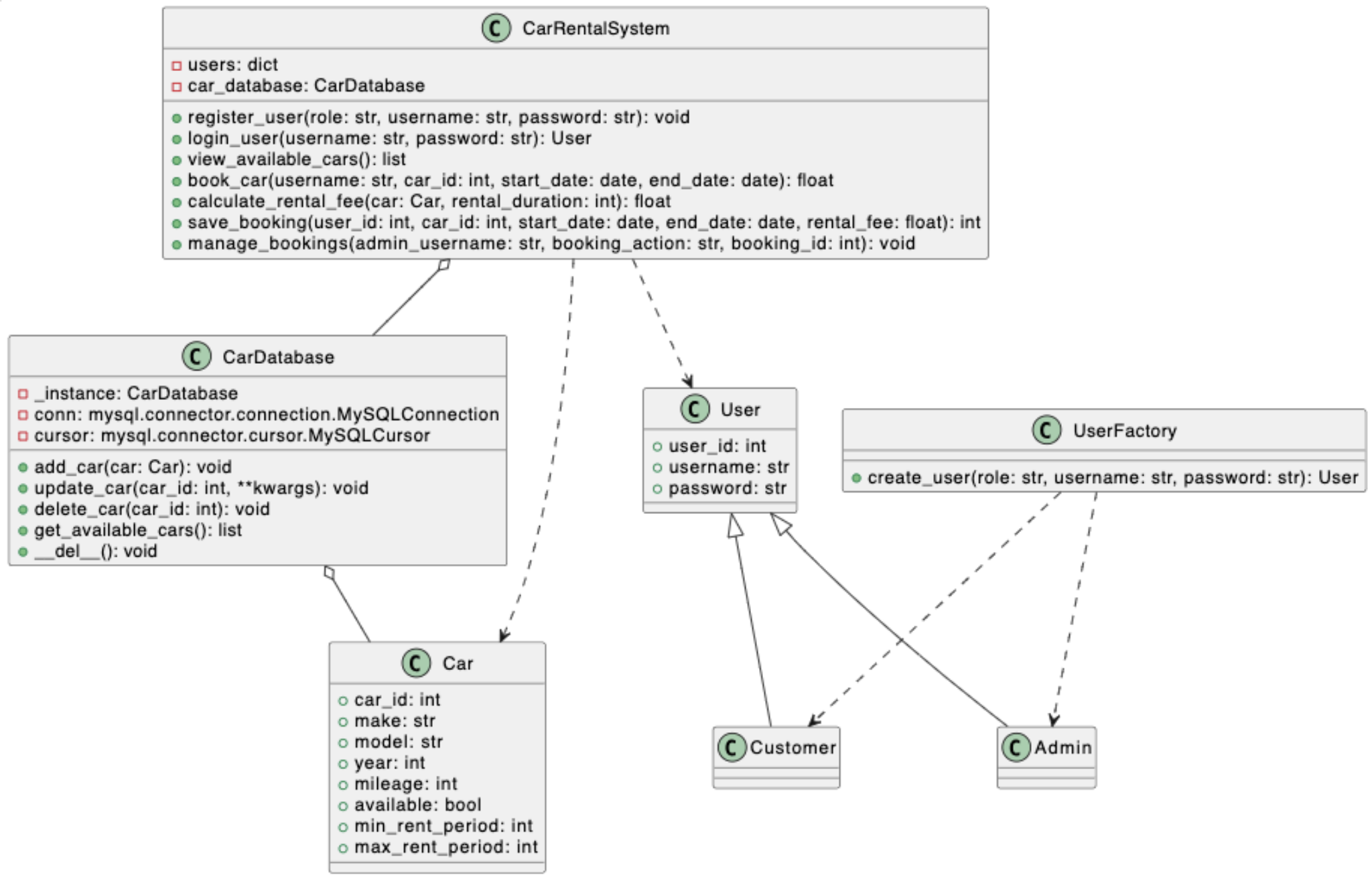
Rental System:

- CarRentalSystem: The main class that orchestrates the interactions between user management, car management, and rental booking.
- RentalBooking: Handles the booking process, including viewing available cars, selecting rental dates, and calculating rental fees.
- RentalManagement: Allows admins to manage rental bookings, including approving or rejecting requests.

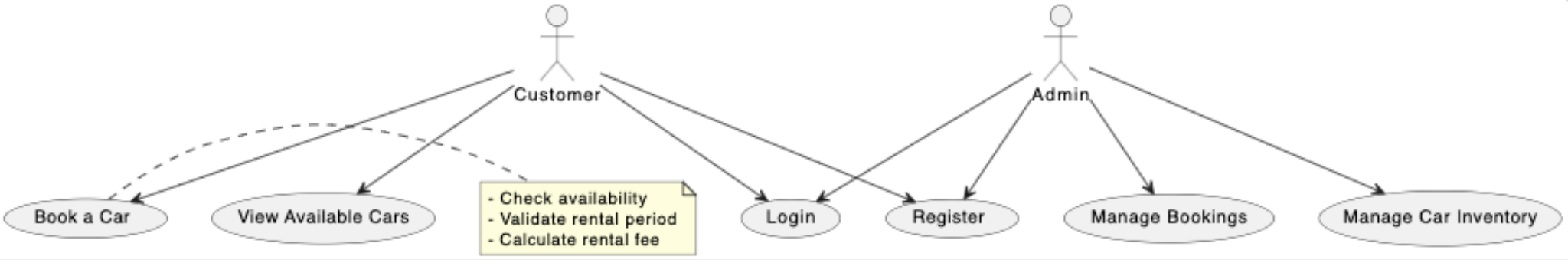
Design Patterns:

- Factory Method: Used to create user objects (Customer or Admin) based on the role.
- Singleton: Ensures that there is only one instance of CarDatabase, providing a single point of access to car records.

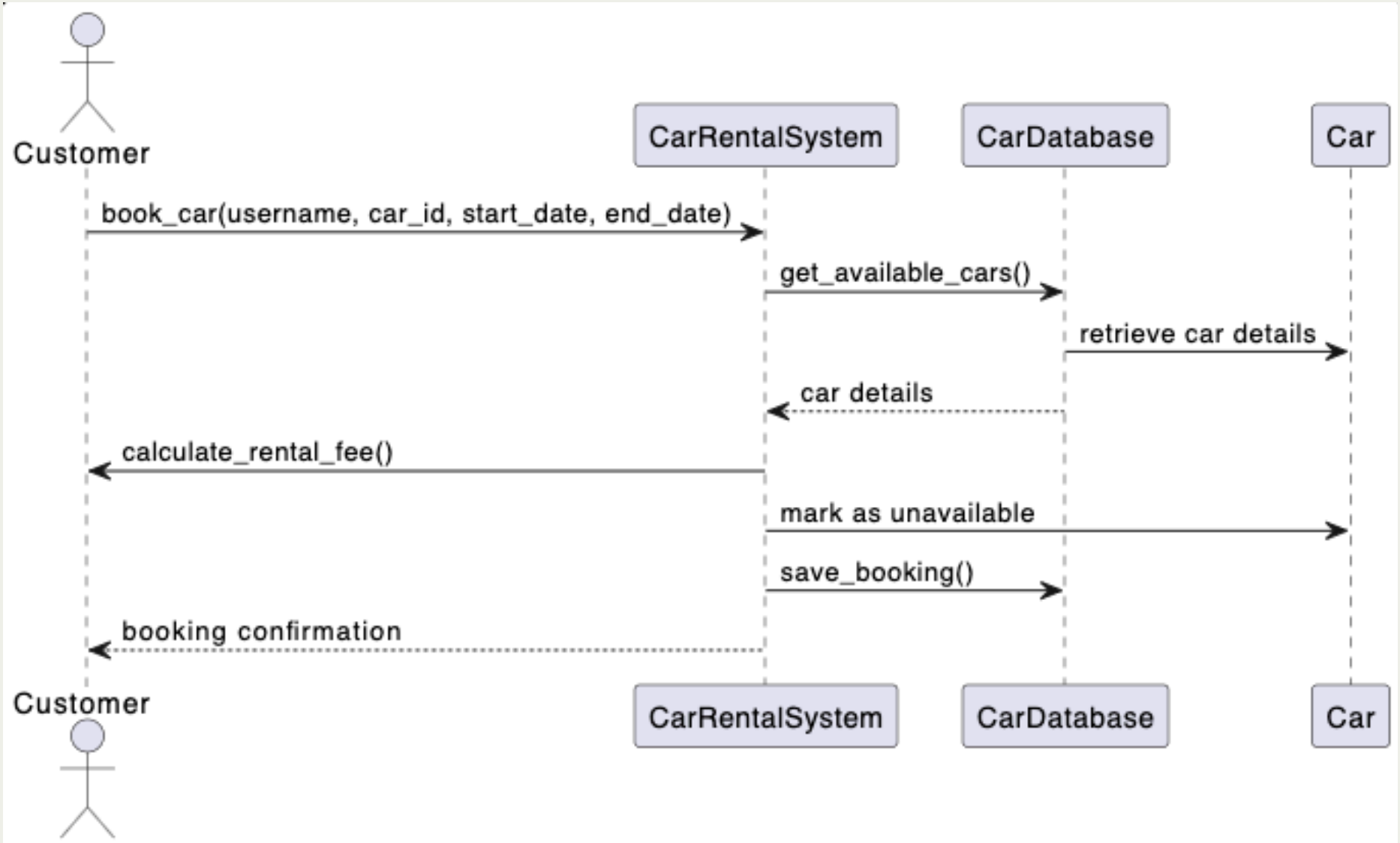
CLASS DIAGRAM



USER CASE DIAGRAM



SEQUENCE DIAGRAM: CUSTOMER



SEQUENCE DIAGRAM: ADMIN