Sirma

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Hotel Room Reservation System

Objective: Design and implement a user-friendly console-based hotel room reservation system that allows efficient management of bookings, user profiles, and room details using file storage.

Functional Requirements:

1. **Hotel Model:**
    - **Define various room types such as Deluxe, Suite, Single, Double in a textual format (e.g., optional read JSON or CSV files).**
    - **Each room type should have attributes like amenities, maximum occupancy, etc., defined in the file.**
2. **Room Management:**
    - **Create a file for room instances: e.g., Deluxe Room 101, Suite 201.**
    - **Attributes for each room should include:**
        - **Room number**
        - **Type (e.g., Deluxe, Suite)**
        - **Price per night**
        - **Cancellation fee**
        - **Status (e.g., available, booked)**
3. **User Interactions:**
    - **On startup, provide a text menu with options like "1. View Rooms", "2. Book a Room", "3. Cancel Booking", etc.**
    - **For user registration and profile management:**
        - **Store user profiles in a file with details like username, password, and booking history.**
        - **Allow users to register, log in, and view their profile.**
    - **Booking:**
        - **Ask the user for desired dates and room type.**
        - **Display available rooms and their prices.**
        - **On booking, update the room's status in the file and store the booking details.**
    - **Cancellation:**
        - **Request the reservation ID.**

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- **Compute any cancellation fees, update the room status, and log the cancellation in the user's profile.**

4. **Booking Summary and Reports:**
    - **Provide an admin mode (accessed via a password or special command).**
    - **Allow administrators to:**
        - **View all bookings.**
        - **View total income and total cancellation fees.**
        - **Add or remove rooms or modify room details.**

Non-functional Requirements:

1. **Data Persistence:**
    - **Use file operations to read and write data.**
    - **Implement error-handling to manage potential file reading/writing issues, ensuring data integrity.**
2. **User Input Validation:**
    - **Ensure input validation for all user inputs to prevent errors and ensure system stability.**
3. **Scalability:**
    - **Design the file structure and code in a modular way to easily add more room types or other features in the future.**

Bonus Features:

1. **Special Offers:**
    - **Allow administrators to set promotional codes that users can apply for discounts.**
2. **Search Feature:**
    - **Provide options to search for bookings based on username, room number, or date range.**
3. **Backup System:**
    - **Implement a feature that allows administrators to create backups of all data files.**

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Evaluation Criteria:

1. **Code Quality:**
    - **Ensure your code is clean, structured, well-commented, and follows best practices. Use meaningful variable and method names.**
2. **Functionality:**
    - **Ensure all functionalities are implemented and are bug-free.**
3. **File Management:**
    - **Ensure efficient, error-free file operations and maintain data consistency.**
4. **User Experience:**
    - **Aim for a user-friendly console interface with clear instructions and feedback.**
    - **Keep it simple!!!**

Good luck! Remember to regularly test your application with different scenarios to catch and resolve potential issues.

NB! You can try to make a Booking system with multiple Hotels.