Screenshots

- Create 2 users, with IDs 1 and 2 and balance 5000, 10000

```
Date || UserId || Balance
2025-05-13 || 2 || 10000
2025-04-10 || 1 || 5000
```

- User 1 tries booking Room 2 from 30/06/2026 to 07/07/2026 (7 nights).

```
Room Number : 1 || Room Type : standard || Price per night : 1000
No bookings for this room.
-----------------------------------------------
Room Number : 2 || Room Type : junior || Price per night : 2000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 1 || 2026-06-30 || 2026-07-07 || 7 || 2000
-----------------------------------------------
Room Number : 3 || Room Type : suite || Price per night : 3000
No bookings for this room.
-----------------------------------------------
```

- User 1 tries booking Room 2 from 07/07/2026 to 30/06/2026.

```
Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.2.2\lib\idea_rt.jar=52950:C:\Program Files\JetBrains\
 thread "main" org.yassine.exceptions.CheckOutDateBeforeCheckInDateException Create breakpoint : The CheckOut date comes after the CheckIn date !
assine.services.Service.bookRoom(Service.java:80)
assine.App.main(App.java:47)
```

- User 1 tries booking Room 1 from 07/07/2026 to 08/07/2026 (1night).

```
Room Number : 1 || Room Type : standard || Price per night : 1000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 1 || 2026-07-07 || 2026-07-08 || 1 || 1000
```

- User 2 tries booking Room 1 from 07/07/2026 to 09/07/2026 (2 nights).

```
Room Number : 3 || Room Type : suite || Price per night : 3000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 2 || 2026-07-07 || 2026-07-09 || 2 || 3000
```

- User 2 tries booking Room 3 from 07/07/2026 to 08/07/2026 (1night).

```
------------------------------------------------
Room Number : 2 || Room Type : junior || Price per night : 2000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 1 || 2026-06-30 || 2026-07-07 || 7 || 2000
------------------------------------------------
Room Number : 3 || Room Type : suite || Price per night : 3000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 2 || 2026-07-07 || 2026-07-08 || 1 || 3000
------------------------------------------------
############# After Updating Room #############
Room Number : 1 || Room Type : suite || Price per night : 10000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 1 || 2026-07-07 || 2026-07-08 || 1 || 1000
------------------------------------------------
Room Number : 2 || Room Type : junior || Price per night : 2000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 1 || 2026-06-30 || 2026-07-07 || 7 || 2000
------------------------------------------------
Room Number : 3 || Room Type : suite || Price per night : 3000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 2 || 2026-07-07 || 2026-07-08 || 1 || 3000
------------------------------------------------
```

- setRoom(1, suite, 10000).

```
------------------------------------------------
Room Number : 2 || Room Type : junior || Price per night : 2000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 1 || 2026-06-30 || 2026-07-07 || 7 || 2000
------------------------------------------------
Room Number : 3 || Room Type : suite || Price per night : 3000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 2 || 2026-07-07 || 2026-07-08 || 1 || 3000
------------------------------------------------
############# After Updating Room #############
Room Number : 1 || Room Type : suite || Price per night : 10000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 1 || 2026-07-07 || 2026-07-08 || 1 || 1000
------------------------------------------------
Room Number : 2 || Room Type : junior || Price per night : 2000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 1 || 2026-06-30 || 2026-07-07 || 7 || 2000
------------------------------------------------
Room Number : 3 || Room Type : suite || Price per night : 3000
CreatedAt || User Id || Check In || Check Out || Nights || Price
2026-06-28 || 2 || 2026-07-07 || 2026-07-08 || 1 || 3000
------------------------------------------------
```

Design questions :

1. It is not a recommended approach to put all the functions in one service, because we violate the Single Responsibility Principle, and also the unit tests become more complex and difficult to be granular.

2. I came to avoid the problem by copying the variables of the Room entity inside the setRoom method. This way, even if we modify the room, this won't affect previous bookings.