

1. The origin of bugs is being traced for BUG 1 (All Service charges are reported as 0.00 when checking out)



```
135
136 public void checkIn() {
137     room.checkin();
138 }
139
140
141 public void addServiceCharge(ServiceType serviceType, double cost) {
142     System.out.println("5222" + cost);
143     charges.add(new ServiceCharge(serviceType, cost));
144     System.out.println("00000" + cost);
145 }
146
147
148 public void checkOut() {
149     room.checkout(this);
150 }
151
```

Problems | Javadoc | Declaration | Console | Coverage

Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_144\bin\javaw.exe (Oct 16, 2018, 10:00:27 AM)

Selection : r

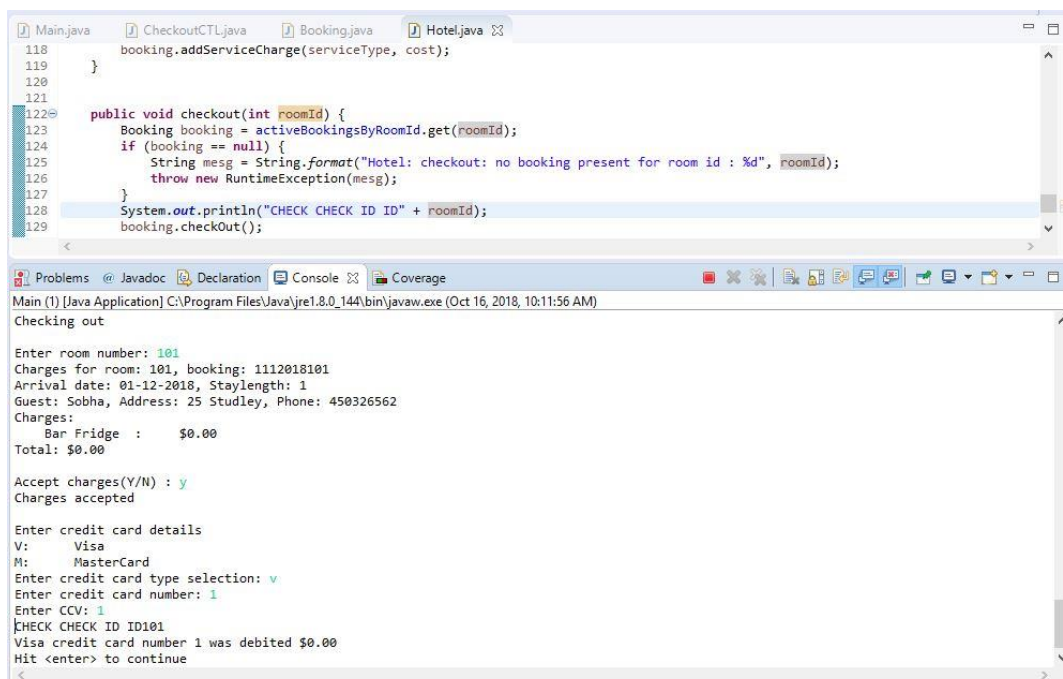
Recording service

Enter Room Id: 201
B: Bar Fridge
R: Restaurant
S: Room Service
Enter service type b
Enter cost: 252
5222252.0
000000

Room 201 charged \$252.00 for Bar Fridge

Hit <enter> to continue

2. It is possible to charge a room for service after the guest has checked out (BUG 2)



```
118 booking.addServiceCharge(serviceType, cost);
119 }
120
121
122 public void checkout(int roomId) {
123     Booking booking = activeBookingsByRoomId.get(roomId);
124     if (booking == null) {
125         String msg = String.format("Hotel: checkout: no booking present for room id : %d", roomId);
126         throw new RuntimeException(msg);
127     }
128     System.out.println("CHECK CHECK ID " + roomId);
129     booking.checkOut();

```

Problems | Javadoc | Declaration | Console | Coverage

Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_144\bin\javaw.exe (Oct 16, 2018, 10:11:56 AM)

Checking out

Enter room number: 101
Charges for room: 101, booking: 1112018101
Arrival date: 01-12-2018, Staylength: 1
Guest: Sobha, Address: 25 Studley, Phone: 450326562
Charges:
Bar Fridge : \$0.00
Total: \$0.00

Accept charges(Y/N) : y
Charges accepted

Enter credit card details
V: Visa
M: MasterCard
Enter credit card type selection: v
Enter credit card number: 1
Enter CCV: 1
CHECK CHECK ID 101
Visa credit card number 1 was debited \$0.00
Hit <enter> to continue

The screenshot shows an IDE with two main panels. The top panel displays the source code for `Hotel.java`, and the bottom panel shows the console output of the application.

Source Code (Hotel.java):

```
118     booking.addServiceCharge(serviceType, cost);
119 }
120
121
122 public void checkout(int roomId) {
123     Booking booking = activeBookingsByRoomId.get(roomId);
124     if (booking == null) {
125         String msg = String.format("Hotel: checkout: no booking present for room id : %d", roomId);
126         throw new RuntimeException(msg);
127     }
128     System.out.println("CHECK CHECK ID ID" + roomId);
129     booking.checkOut();
130 }
```

Console Output:

```
Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_144\bin\javaw.exe (Oct 16, 2018, 10:11:56 AM)

Hotel Management System

Please select:

B: Book a Room
C: Check In
R: Record Service
D: Check Out

Q: Quit

Selection : R

Recording service

Enter Room Id: 101
B: Bar Fridge
R: Restaurant
S: Room Service
Enter service type
```

