

- **Simplification:**

JUnit test done before the bugs were fixed.

For BUG 1: (All Service charges are reported as 0.00 when checking out)

```

eclipse-workspace - a4/src/hotel/checkout/CheckoutCTLTest.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

Package ... JUnit
Finished after 0.15 seconds
Runs: 1/1 Errors: 0 Failures: 0
> CheckoutCTLTest [Runner: JUnit 5]

Failure Trace

<terminated> CheckoutCTLTest [JUnit] C:\Program Files\Java\jre-10.0.2\bin\javaw.exe (14 Oct. 2018, 9:01:03 pm)
Room 1 charged $100.00 for Bar Fridge
  
```

```

1 package hotel.checkout;
2 import static org.junit.jupiter.api.Assertions.*;
3 class CheckoutCTLTest {
4     @Test
5     void testCheckOut() {
6         int creditCardNumber = 2;
7         int ccv = 2;
8         String guestname = "Ashmit";
9         String guestAddress = "Nepal";
10        int guestPhone = 524875987;
11        int occupantNumber = 1;
12        CreditCardType type = CreditCardType.MASTERCARD;
13        RoomType roomType = RoomType.SINGLE;
14        Date arrivalDate = new Date(2018, 02, 11);
15        int stayLength = 1;
16        CreditCard creditCard = new CreditCard(type, creditCardNumber, ccv);
17        Room room = new Room(1, roomType);
18        Guest guest = new Guest(guestname, guestAddress, guestPhone);
19        Hotel hotel = new Hotel();
20        hotel.addRoom(roomType, 1);
21        Booking booking = new Booking(guest, room, arrivalDate, stayLength, occupantNumber, creditCard);
22        CheckoutCTL checkoutCTL = new CheckoutCTL(hotel);
23        hotel.book(room, guest, arrivalDate, stayLength, occupantNumber, creditCard);
24        long confirmationNumber = booking.getConfirmationNumber();
25        hotel.checkin(confirmationNumber);
26        RecordServiceCTL recordService = new RecordServiceCTL(hotel);
27        recordService.roomNumberEntered(room.getId());
28        recordService.serviceDetailsEntered(ServiceType.BAR_FRIDGE, 100);
29        checkoutCTL.changeStateRoom();
30        checkoutCTL.roomIdEntered(room.getId());
31        checkoutCTL.chargesAccepted(true);
32        checkoutCTL.creditDetailsEntered(CreditCardType.MASTERCARD, 2, 2);
33    }
34 }
  
```

```

eclipse-workspace - a4/src/hotel/checkout/CheckoutCTLTest.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

Package ... JUnit
Finished after 0.15 seconds
Runs: 1/1 Errors: 0 Failures: 0
> CheckoutCTLTest [Runner: JUnit 5]

Failure Trace

<terminated> CheckoutCTLTest [JUnit] C:\Program Files\Java\jre-10.0.2\bin\javaw.exe (14 Oct. 2018, 9:01:03 pm)

Room 1 charged $100.00 for Bar Fridge

Charges for room: 1, booking: 11239181
Arrival date: 11-03-3918, Staylength: 1
Guest: Ashmit, Address: Nepal, Phone: 524875987
Charges:
    Bar Fridge :    $0.00
Total: $0.00

Charges accepted
MasterCard credit card number 2 was debited $0.00
  
```

```

1 package hotel.checkout;
2 import static org.junit.jupiter.api.Assertions.*;
3 class CheckoutCTLTest {
4     @Test
5     void testCheckOut() {
6         int creditCardNumber = 2;
7         int ccv = 2;
8         String guestname = "Ashmit";
9         String guestAddress = "Nepal";
10        int guestPhone = 524875987;
11        int occupantNumber = 1;
12        CreditCardType type = CreditCardType.MASTERCARD;
13        RoomType roomType = RoomType.SINGLE;
14        Date arrivalDate = new Date(2018, 02, 11);
15        int stayLength = 1;
16        CreditCard creditCard = new CreditCard(type, creditCardNumber, ccv);
17        Room room = new Room(1, roomType);
18        Guest guest = new Guest(guestname, guestAddress, guestPhone);
19        Hotel hotel = new Hotel();
20        hotel.addRoom(roomType, 1);
21        Booking booking = new Booking(guest, room, arrivalDate, stayLength, occupantNumber, creditCard);
22        CheckoutCTL checkoutCTL = new CheckoutCTL(hotel);
23        hotel.book(room, guest, arrivalDate, stayLength, occupantNumber, creditCard);
24        long confirmationNumber = booking.getConfirmationNumber();
25        hotel.checkin(confirmationNumber);
26        RecordServiceCTL recordService = new RecordServiceCTL(hotel);
27        recordService.roomNumberEntered(room.getId());
28        recordService.serviceDetailsEntered(ServiceType.BAR_FRIDGE, 100);
29        checkoutCTL.changeStateRoom();
30        checkoutCTL.roomIdEntered(room.getId());
31        checkoutCTL.chargesAccepted(true);
32        checkoutCTL.creditDetailsEntered(CreditCardType.MASTERCARD, 2, 2);
33    }
34 }
  
```

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

workspace - a4/src/hotel/service/TestRecordServiceCTL.java - Eclipse IDE

Source Refactor Navigate Search Project Run Window Help

JUnit 5

4 seconds

Errors: 0 Failures: 0

TestRecordServiceCTLTest [Runner: JUnit 5]

```
1 package hotel.service;
2 import static org.junit.jupiter.api.Assertions.*;
3 class TestRecordServiceCTL {
4     @Test
5     void testCheckOut() {
6         int creditCardNumber = 2;
7         int ccv = 2;
8         String guestname = "Ronaldo";
9         String guestAddress = "Portugal";
10        int guestPhone = 524875987;
11        int occupantNumber = 1;
12        CreditCardType type = CreditCardType.MASTERCARD;
13        RoomType roomType = RoomType.SINGLE;
14        Date arrivalDate = new Date(2018, 11, 01);
15        int stayLength = 1;
16        CreditCard creditCard = new CreditCard(type, creditCardNumber, ccv);
17        Room room = new Room(1, roomType);
18        Guest guest = new Guest(guestname, guestAddress, guestPhone);
19        Hotel hotel = new Hotel();
20        hotel.addRoom(roomType, 1);
21        Booking booking = new Booking(guest, room, arrivalDate, stayLength, occupantNumber, creditCard);
22        CheckoutCTL checkoutCTL = new CheckoutCTL(hotel);
23        hotel.book(room, guest, arrivalDate, stayLength, occupantNumber, creditCard);
24        long confirmationNumber = booking.getConfirmationNumber();
25        hotel.checkin(confirmationNumber);
26        RecordServiceCTL recordService = new RecordServiceCTL(hotel);
27        recordService.roomNumberEntered(room.getId());
28        recordService.serviceDetailsEntered(ServiceType.BAR_FRIDGE, 100);
29        checkoutCTL.changeStateRoom();
30        checkoutCTL.roomIdEntered(room.getId());
31        checkoutCTL.chargesAccepted(true);
32        checkoutCTL.creditDetailsEntered(CreditCardType.MASTERCARD, 2, 2);
33        recordService.roomNumberEntered(room.getId());
34        recordService.serviceDetailsEntered(ServiceType.BAR_FRIDGE, 100);
35    }
36 }
```

workspace - a4/src/hotel/service/TestRecordServiceCTL.java - Eclipse IDE

Source Refactor Navigate Search Project Run Window Help

JUnit 5

0.164 seconds

Errors: 0 Failures: 0

TestRecordServiceCTLTest [Runner: JUnit 5]

```
37        Guest guest = new Guest(guestname, guestAddress, guestPhone);
38        Hotel hotel = new Hotel();
39        hotel.addRoom(roomType, 1);
40        Booking booking = new Booking(guest, room, arrivalDate, stayLength, occupantNumber, creditCard);
41        CheckoutCTL checkoutCTL = new CheckoutCTL(hotel);
42        hotel.book(room, guest, arrivalDate, stayLength, occupantNumber, creditCard);
43        long confirmationNumber = booking.getConfirmationNumber();
44        hotel.checkin(confirmationNumber);
45        RecordServiceCTL recordService = new RecordServiceCTL(hotel);
46        recordService.roomNumberEntered(room.getId());
47        recordService.serviceDetailsEntered(ServiceType.BAR_FRIDGE, 100);
48        checkoutCTL.changeStateRoom();
49        checkoutCTL.roomIdEntered(room.getId());
50        checkoutCTL.chargesAccepted(true);
51        checkoutCTL.creditDetailsEntered(CreditCardType.MASTERCARD, 2, 2);
52        recordService.roomNumberEntered(room.getId());
53        recordService.serviceDetailsEntered(ServiceType.BAR_FRIDGE, 100);
54    }
55 }
56 }
57
58
```

Problems Javadoc Declaration Search Console

<terminated> CheckoutCTLTest [JUnit] C:\Program Files\Java\jre-10.0.2\bin\javaw.exe (14 Oct. 2018, 11:03:17 pm)

Room 1 charged \$100.00 for Bar Fridge

Charges for room: 1, booking: 11239181
Arrival date: 11-03-3918, Staylength: 1
Guest: Ashmit, Address: Nepal, Phone: 524875987
Charges:
Bar Fridge : \$0.00
Total: \$0.00

Charges accepted
MasterCard credit card number 2 was debited \$0.00