# Use Case Diagram for the Hotel Management System

Learn how to define use cases and create the corresponding use case diagram for the hotel management system.

Let's build the use case diagram for the hotel management system and understand the relationship between its different components.

First, we'll define the different elements of our hotel, followed by the complete use case diagram of the system.

## System

Our system is a "hotel."

## Actors

Now, we will define the main actors of our hotel management system.

### Primary actors

- **Guest:** This is the hotel's primary actor who can book a room, make payment, and change or cancel the reservations.
- **Receptionist:** This actor acts as the admin of the system and can perform any task a "Guest" can perform. This can also add, remove, or update the room, check in/check out guests, and issue room keys for guests.
- **Manager:** This actor can add or modify an employee and issue a card to an employee of the hotel.
- **Housekeeper:** This can add or update the room's housekeeping status.

### Secondary actors

- **System:** This can send booking notifications to guests.
- **Server:** This can add or update room status according to the room change request.

## Use cases

In this section, we will define the use cases for the hotel. We have listed the use cases according to their respective interactions with a particular actor.

> **Note:** You will see some use cases occurring multiple times because they are shared among different actors in the system.

### Guest

- **Book room:** To book a room in the hotel
- **Update booking:** To update a room booking in the hotel
- **Login/Logout:** To log in and out of the hotel management system
- **Cancel booking:** To cancel a room booking in the hotel

- **View booking:** To view and verify a room booking
- **Print booking:** To print booking details from the hotel management system
- **Search room/booking:** To search for a room or a booking in the hotel management system
- **Payment:** To pay the room rent to the hotel
- **View account:** To view account details and booking status
- **Register new account:** To register a new account for new guests
- **Return room key:** To return the room key before checkout

## Receptionist

- **Add room:** To add rooms to the hotel management system so guests can book them
- **Update room:** To update room status from available to booked or vice versa
- **Remove room:** To remove a room from the hotel management system so guests can't book it
- **Book room:** To book a room in the hotel
- **Update booking:** To update a room booking in the hotel
- **Login/Logout:** To log in and out of the hotel management system
- **Cancel booking:** To cancel a room booking in the hotel
- **View booking:** To view and verify a room booking
- **Print booking:** To print booking details from the hotel management system
- **Search room/booking:** To search for a room or a booking in the hotel management system
- **View account:** To view account details and booking status
- **Register new account:** To register a new account for new guests
- **Check in guest:** To check in guests to the hotel
- **Check out guest:** To check out guests from the hotel
- **Issue room key:** To issue room keys to guests who checked in

## Manager

- **Issue employee card:** To issue employee cards so one can be identified
- **Add/modify employee:** To add a new employee to the hotel management system or to modify the employee's status
- **Add room:** To add rooms to the hotel management system so guests can book them
- **Update room:** To update room status from available to booked or vice versa
- **Remove room:** To remove a room from the hotel management system so guests can't book it
- **Book room:** To book a room in the hotel
- **Update booking:** To update a room booking in the hotel
- **Login/Logout:** To log in and out of the hotel management system
- **Cancel booking:** To cancel a room booking in the hotel
- **View booking:** To view and verify a room booking.
- **Print booking:** To print the booking details from the hotel management system
- **Search room/booking:** To search for a room or a booking in the hotel management system
- **View account:** To view account details and booking status
- **Register new account:** To register a new account for new guests
- **Check in guest:** To check in guests to the hotel
- **Check out guest:** To check out guests from the hotel
- **Issue room key:** To issue room keys to guests who checked in

## System

- **Add/update room charge:** To update the status of the room charge
- **Send booking notification:** To send booking notification to guests

## Housekeeper

- **Add/update room housekeeping:** To update the housekeeping status of rooms

# Relationships

We describe the relationships between and among actors and their use cases in this section.

## Generalization

- The manager is the boss of the receptionist and has access to everything a receptionist has. Therefore, "Manager" has a generalization relationship with "Receptionist."
- "Cash" and "Credit card" use cases are used for payments. Hence, both have a generalization relationship with the "Pay ticket" use case.

## Associations

The below table shows the association relationship between actors and their use cases.

| Guest | Receptionist | Manager | System | Housekeeper |
|---|---|---|---|---|
| Book room | Book room | Issue employee card | Send booking notification | Add/update room housekeeping |
| Payment | View account | Add/modify employee | Add/update room charge | |
| View account | Register new account | Book room | | |
| Register new account | Print booking | View account | | |
| Print booking | Cancel booking | Register new account | | |
| Cancel booking | Login/Logout | Print booking | | |

| | | | | |
|---|---|---|---|---|
| Login/Logout | Check in guest | Cancel booking | | |
| Search room/booking | issue room key | Login/Logout | | |
| Update booking | Search room/booking | Check-in guest | | |
| View booking | Update booking | Issue room key | | |
| Return room key | Check out guest | Search room/booking | | |
| | View booking | Update booking | | |
| | Add room | Check-out guest | | |
| | Remove room | View booking | | |
| | Update room | Add room | | |
| | | Remove room | | |
| | | Update room | | |

## Include

- Whenever a guest books a room, the payment will be processed. Hence, the "Book room" use case has an include relationship with "Payment."

- When a receptionist checks in a guest, a key is issued to the guest. Hence, "Check-in guest" has an include relationship with "Issue room key."

- When a guest checks out, the key is returned to the receptionist. Hence, "Check-out guest" has an include relationship with "Return room key."

- If a booking is canceled, the payment will be refunded. Hence the "Cancel booking" use case has an include relationship with "Refund payment."

# Use case diagram

Here's the use case diagram of the hotel management system:
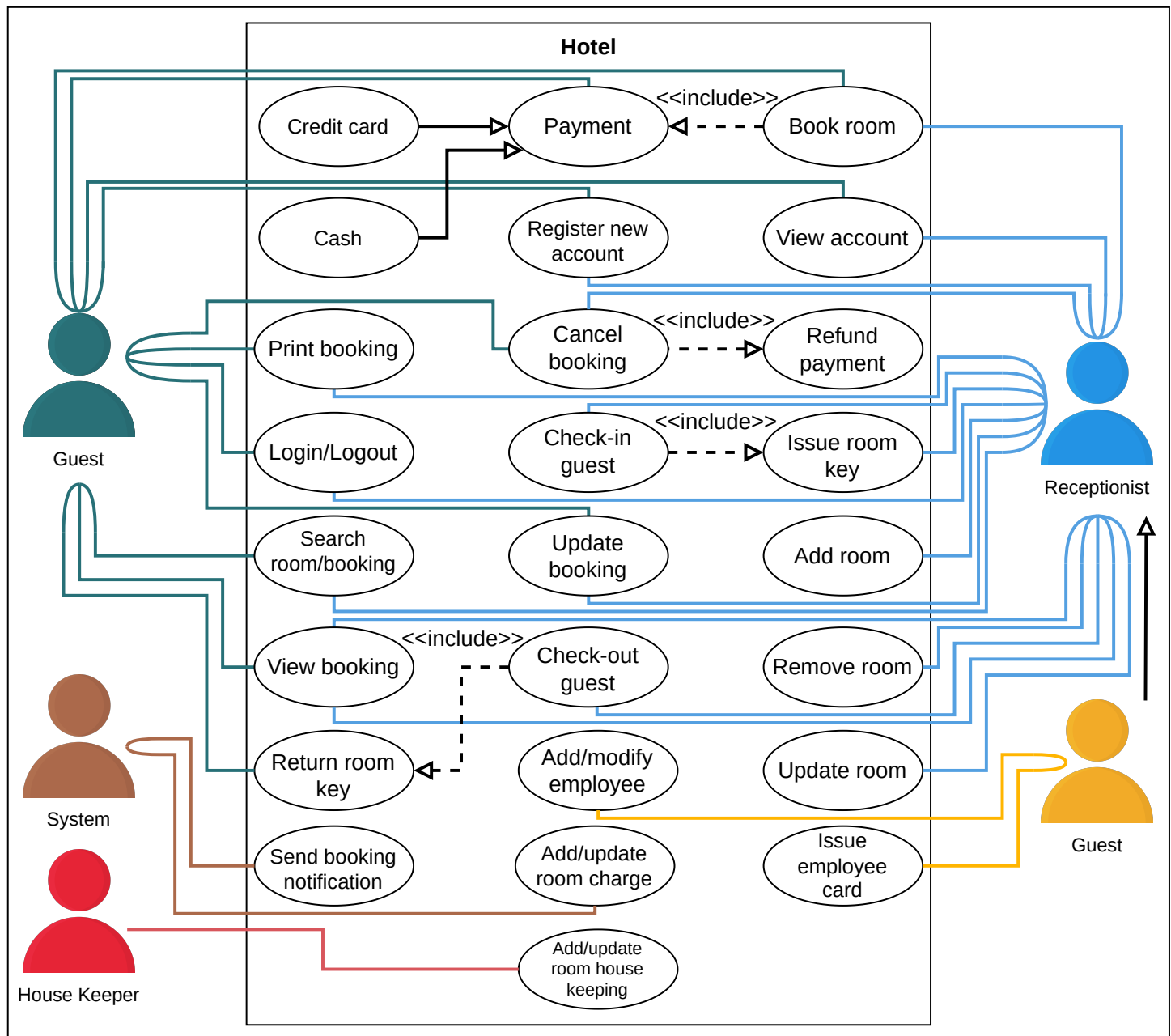
The use case diagram of the hotel management system

In the next lesson, we'll discuss the class diagram with a detailed explanation of all classes and their relationship with each other.