PA2550: Seminar Series in Software Engineering

Group Project: Use Case Analysis

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1. UML Use Case Diagram
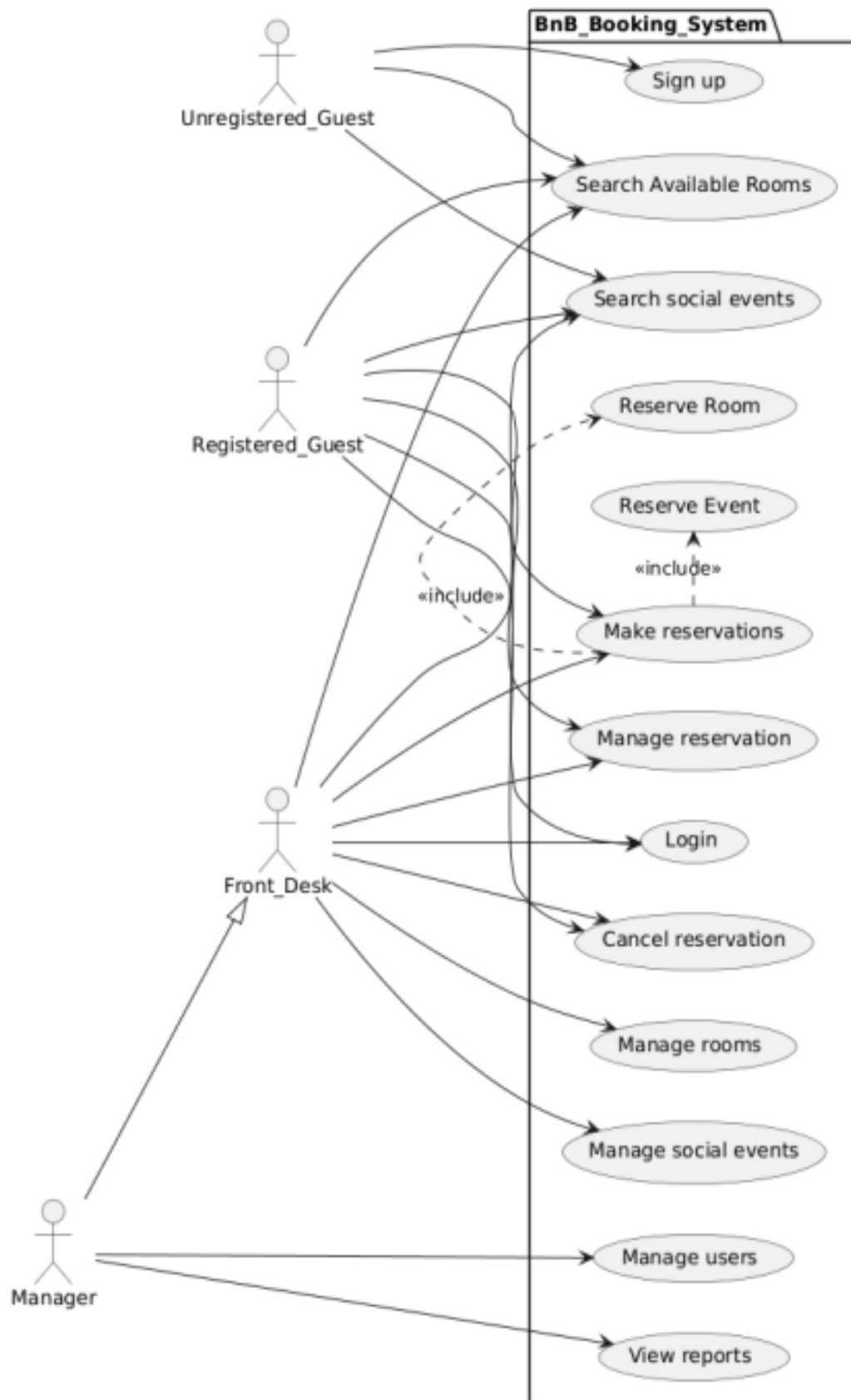
```
@startuml
left to right direction
actor Registered_Guest as rg
actor Unregistered_Guest as ug
actor Front_Desk as f
actor Manager as m
m --|> f

package BnB_Booking_System {
 usecase "Search Available Rooms" as UC1
 usecase "Search social events" as UC2
 usecase "Sign up" as UC3
 usecase "Make reservations" as UC4
 usecase "Cancel reservation" as UC5
 usecase "Login" as UC6
 usecase "Manage rooms" as UC7
 usecase "Manage social events" as UC8
 usecase "Manage reservation" as UC9
 usecase "Manage users" as UC10
 usecase "View reports" as UC11
 usecase "Reserve Room" as UC12
 usecase "Reserve Event" as UC13
}

rg --> UC1
ug --> UC1
f --> UC1
rg --> UC2
ug --> UC2
f --> UC2
ug --> UC3
rg --> UC4
f --> UC4
rg --> UC5
f --> UC5
rg --> UC6
f --> UC6
f --> UC7
f --> UC8
rg --> UC9
f --> UC9
m --> UC10
m --> UC11
UC4 .> UC12 : <<include>>
UC4 .> UC13 : <<include>>
actor Manager as m
@enduml
```

2. High-Level Use Cases

Use Case Name	Make Room Reservation
Use Case ID	UC01
Actor(s)	Registered Guests, Manager, Front Desk Staff
Type	Primary
Basic Flow	**Guest**, **Manager**, and **Front Desk Staff** who want to make a reservation for a room will visit the Bed and Breakfast website. The **Manager** and the **Front Desk Staff** log in to use the reservation system. **Guest**, **Manager**, and **Front Desk Staff** can choose the desired check-in and check-out dates and the number of guests. The website will display the available rooms on the specified dates. The **Guest**, **Manager**, and **Front Desk Staff** view individual rooms and click on the "Reserve" button against a desired room. The **Manager** and **Front Desk Staff** are redirected to a booking page where they enter the guest's details and book a room on behalf of the guest. The **Guest, Manager and Front-Desk Staff** will receive the booking confirmation and a unique booking reference number through email.

Use Case Name	Manage Social Events
Use Case ID	UC02
Actor(s)	Manager, Front Desk Staff
Type	Primary
Basic Flow	**Manager** and **Front Desk Staff** log in to the system and go to the Manage Event page by clicking the "Manage event" button on the homepage. The system displays a web page with the fields Name, Date, Start time, End time, Venue, Host, Minimum Number of people, Maximum number of people, Age restrictions, Additional Information. **Manager** and **Front Desk Staff** can enter the details of new social events and submit them. **Manager** and **Front Desk Staff** can view all the social events. **Manager** and **Front Desk Staff** can edit or cancel social events.

Use Case Name	Sign Up Guest
Use Case ID	UC03
Actor(s)	**Guest**
Type	Primary
Basic Flow	The **Guest** opens a sign-up page by clicking the "Sign Up" button on the homepage. The System displays the sign-up form with input fields; Name, Email, Contact Number, City, Zip code, State (optional), Country, Password, and Confirm password. The **Guest** fills out the form and submits the information and a new account is created.

Use Case Name	Cancel Reservation
Use Case ID	UC04
Actor(s)	Guest, Manager, Front Desk Staff
Type	Primary
Basic Flow	**Guest**, **Manager**, and **Front Desk Staff** log in to the system and enter a unique booking reference number. **Guest**, **Manager**, and **Front Desk Staff** view the booking that was made against the booking reference number. **Guest**, **Manager** and **Front Desk Staff** clicks on the "Cancel" checkbox against their booking. Booking is considered as cancelled and the details are updated. The **Guest**, **Manager**, and **Front Desk Staff** see a pop-up notification saying the booking is cancelled. **Guest**, **Manager**, and **Front Desk Staff** receive an email confirmation of the cancelled booking.

Use Case Name	Add Room
Use Case ID	UC05
Actor(s)	Manager and Front Desk Staff
Type	Primary
Basic Flow	**Manager** and **Front Desk Staff** who want to add a room will log in into the Bed and Breakfast website and click on "Add Room" button in the dashboard page. A form to fill room details will appear and after submitting the room details like Name, Description, Price, Room Type, and Room capacity, the room will be added in the website.

Use Case Name	View Reports
Use Case ID	UC06
Actor(s)	Manager
Type	Primary
Basic Flow	**Manager** can view performance report of the BnB by clicking on "View Reports" link on the homepage. The **Manager** enters the period for which he wants to view the reports and clicks on "Search" button. The Report page displays reports like number of guests who made reservations at the BnB, Total Revenue incurred by the BnB and Summary report like Occupancy Rate based on Room types.

3. Primary Use Cases

Use Case Name	Reserve a Room
Use Case ID	UC01
Actor(s)	Guest, Manager, and Front Desk Staff
Purpose	To make a reservation for a Room at BnB
Overview	The **Guest** can search and select a room by entering check-in, check-out dates, and number of guests. The **Guest** enters their details to make a reservation. The **Manager** and **Front Desk Staff** can do the same on behalf of the guest if needed. The **Guest** receives a booking confirmation email along with a unique booking reference number.
Type	Primary
Cross Reference	REQ3, REQ4, REQ5, REQ7
Pre-Condition(s)	**Manager** and **Front Desk Staff** should be logged in to the system to be able to reserve a room on behalf of the guest.
Main success scenario	
Actor's Actions	System's Response
1) **Guest**, **Manager**, and **Front Desk Staff** enter check-in date, check-out date, and number of guests in the search field present on the BnB homepage and click on the "Search" button.	2) The System displays a list of available rooms based on the search criteria provided.
3) **Guest**, **Manager**, and **Front Desk Staff** click on individual rooms to view in detail.	4) The System opens a new page with information on the selected room.
5) **Guest**, **Manager**, and **Front Desk Staff** click on the "Reserve" Button to book a room.	6) The System opens a new page with form fields: name, email, contact number, city, zip code, state(optional), and country.

7) **Guest**, **Manager**, and **Front Desk Staff** enter the details of the guest in the form and click submit.	8) The System saves the details it has received and sends a booking confirmation email to the guest with a unique booking reference number.
Post-Condition(s):	The System updates the information on room availability in the database.
Extensions (if any)	
Actor's Actions	**System's Response**
1) The **Guest**, **Manager**, and **Front Desk Staff** enter the check-in date and check-out date which are earlier than the current date or the check-out date is earlier than the check-in date.	2) The System throws an error message saying "Invalid Dates".

Use Case Name	Viewing reports
Use case ID:	UC02
Actor(s):	Manager
Purpose:	To allow the manager to view reports on BnB reservations
Overview:	The **Manager** can view periodic reports on the BnB reservations to determine business performance.
Type:	Primary
Cross Reference:	REQ19
Pre-Conditions:	The **Manager** should be logged in.
Main success scenario	
Actor's Actions	System's Response
1) The **Manager** selects the period for which he wants to view the report	2) The System processes the request and returns a summary of the BnB reservations based on the selected period.
Post-Condition(s):	The **Manager** can view a detailed report generated by the system.