



Epoka University
Faculty of Engineering and Architecture
Department of Computer Engineering
CEN 302 – Software Engineering

**Hotel Management
Requirements Specification**

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Final Draft
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Group Members

Armend Ostaku
Dario Pipa
Elisa Haxhillazi
Enkel Murati
Kleidi Kertusha
Klevi Mecaj
Sara Martiri
Igli Shqarri

Hotel Management Platform Requirements Specification

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1. Executive Summary

1.1 Project Overview

In recent years, the travel industry has witnessed a significant transformation driven by the advent of online platforms. These platforms have revolutionized the way travelers book their accommodations, providing them with a diverse range of options at their fingertips. However, amidst this digital revolution, there remains a pressing demand for a comprehensive Software as a Service (SaaS) application that caters specifically to the unique requirements of travelers.

This revolutionary SaaS app aims to serve as a one-stop solution, offering an array of features that not only facilitate seamless booking experiences for travelers but also empower hosts to effortlessly manage their properties. By leveraging the power of cutting-edge technology, this web application seeks to bridge the gap between travelers and hosts, providing them with a user-friendly and intuitive platform.

Through the implementation of this software solution, we propose to address the challenges faced by both clients seeking their next home, hotel, or any other type of accommodation, and hosts in need of efficient management tools for their listings. With this innovative SaaS app, travelers will enjoy a hassle-free experience while searching for their ideal accommodations, with personalized search filters, real-time availability updates, and secure online booking capabilities.

Moreover, this comprehensive platform goes beyond meeting the needs of travelers, extending its benefits to hosts as well. Hosts can effortlessly manage their listings, streamline their operations, and enhance their property's visibility through robust features such as automated booking management, dynamic pricing optimization, and centralized communication channels with guests. This all-inclusive solution not only simplifies the process for hosts but also empowers them to maximize their property's potential.

Furthermore, the exceptional functionality and seamless user experience of this SaaS app will contribute to its organic growth and success. By offering a comprehensive suite of services, without the need for extensive advertising efforts, this web application will attract a target audience of travelers and hosts alike. The word-of-mouth referrals and positive reviews garnered from satisfied users will further fuel the growth and sustainability of the platform, solidifying its position as a go-to solution for all travel-related needs.

In conclusion, the travel industry's landscape has undergone a remarkable transformation with the rise of online platforms. However, there is an evident need for a sophisticated SaaS app that caters specifically to the unique requirements of travelers. This revolutionary web application not only provides a user-friendly platform for travelers to find and book their ideal accommodations but also empowers hosts with seamless management tools. By offering a comprehensive solution, this software aims to satisfy the needs of clients and hosts alike, while leveraging organic growth and positive user experiences to ensure long-term success.

1.2 Purpose and Scope of this Specification

The primary objective of this SaaS app is to provide a comprehensive platform that simplifies the process of booking and managing accommodations for travelers and hosts. Users will have the ability to search for properties based on their preferences, including location, price range, amenities, and more. The app will also feature a secure payment system to facilitate easy and hassle-free transactions between hosts and guests. Additionally, hosts will have access to various management tools such as creating and managing property listings, viewing booking history, and communicating with guests. The app will prioritize intuitive navigation and user-friendliness to ensure users can quickly find what they need and make informed decisions. Detailed documentation will be available to guide users on the app's features, functionalities, and any relevant requirements or limitations.

Furthermore, this SaaS app will strive to provide a seamless and personalized experience for both travelers and hosts. By leveraging advanced algorithms and machine learning capabilities, the app will be able to offer tailored recommendations to travelers based on their past preferences and browsing behavior. This will enable users to discover new and exciting accommodations that perfectly align with their unique tastes and requirements. Similarly, hosts will benefit from intelligent insights and analytics, empowering them to optimize their listings and pricing strategies to attract more guests and maximize their earning potential. By harnessing the power of data-driven technologies, this app aims to enhance the overall user experience and foster a thriving community of satisfied travelers and successful hosts.

In scope

- Providing the clients with all information they require from searching through the platform filters.
- Clients can book a room, home, property .
- Allowing hosts to manage their property offers.
- Recordkeeping of the past data.
- Rating system for hosts services.
- Software maintenance will be provided as long as the platform is existing.

Out of Scope

- The quality of the service from the hosts itself.
- Prices the hosts put for their property.
- Amount return for cancellation of booked services.
- Providing transportation to and from the property.

2. Product/Service Description

The SaaS app we are developing is a platform for short-term vacation rental bookings, similar to Airbnb.

The app will allow property owners to list their properties for rent and travelers to search and book these properties for their vacations.

The app will include a user-friendly interface that will allow property owners to simply establish and maintain their listings, including adding images, setting price, and controlling availability.

Travelers will be able to search for houses based on location, dates, and other criteria, browse photographs and facts about the properties, and make secure bookings using the app.

2.1 Product Context

Our platform is a complete system created for both hosts and travelers .

The app will have an intuitive and easy to use interface , with a lot of features and functionalities and designed in a way to benefit both the user and the host.

The system and platform will allow users to search and book accommodation from everywhere, anytime only using their smartphones or devices. The platform will have a messaging system to allow users and hosts to communicate with each other so the booking experience from both sides is as smooth as possible.

The software will provide features for both the managers and superadmins where they will be able to do CRUD operations with listings, bookings, and monitor sales, generate reports etc.

Overall the aim for the platform is to be a user-friendly system that connects users and hosts from all over the world and making the booking experience as enjoyable as possible and as easy as possible.

2.2 User Characteristics

The platform will have 4 groups of users:

- Super Admin
 - Log in.
 - Surf the feed.
 - CRUD Admins , roles and permissions.
 - Restrict listings and users.
 - Get the pdf of the generated ticket.
 - Review a service.
 - FULL ACCESS
- Admin
 - Log in
 - Create/Edit/Delete managers.
 - Cancel already booked service and turn back money.
 - Generate reports for past services.
 - See the payments done by clients.
 - See the feedback form clients and give a response.
 - Search for a user ticket

- Manager
 - Log in
 - Manage all the listings
 - Check the payments done till now.
 - Generate reports about the past services.
 - See the past bookings for the listings.
 - Monitor track sales and generate sales reports
 - See the feedback from clients and give a response.
 - Advertise the property
- Guest
 - Log in
 - Book property, listings
 - Message hosts
 - Search properties.
 - Cancel a booking.
 - Review a service
 - Give feedback
 - Generate pdf of the ticket

2.3 Assumptions

- Since our product is a web application it requires a stable internet connection whenever it needs to be accessed.
- The system language will be English and no other languages are available for the moment, therefore users who intend to use our platform need to have a basic knowledge of English language
- The cancellation of tickets is completely handled by host policies.
- Users have access to reliable stable internet and devices to access the app.
- Property owners are willing to list their properties:
- Users will provide accurate and honest reviews:
- Users will comply with legal and regulatory laws
- Users want to book listings through online transactions

2.4 Constraints

- Our system is a stand alone platform which does not operate in parallel with other platforms.
- The platform is built using html,css,ReactJs, .NET
- Listings must be a legitimate property and provide the identification number while registering.
- The rates and fees of the platform are set by the host which provides the service.
- Legal and Regulatory compliance: subject to local regulations and laws that may vary by location to location
- Data protection and security

2.5. Dependencies

- Third-party APIs: Our app may will rely on third-party APIs, such as payment gateways, geolocation services etc.
- Internet connectivity: Our app will rely on users having a stable and reliable internet connection to access the platform and complete bookings.
- Our app will have to rely on Cloud Serves,databases etc
- Regulatory compliance: Our app may be subject to various legal and regulatory requirements, such as data privacy laws or financial regulations

3. Requirements

3.1 Functional Requirements

Req #	Requirements	Comments	Priority	Date	Reviewed/Approved
Fr_1	User Authentication:	This feature should allow users to sign up for an account by providing basic information such as their name, email, and password. Once the user has created an account, they should be able to log in and log out of the app at any time.	3	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_2	Property Listings:	This feature should allow users to browse all available properties for rent or create a new listing for their own property. Property listings should include detailed information about the property, such as its location, amenities, price, photos, and availability. Property owners should be able to manage their listings by editing or deleting them as needed.	3	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_3	The system should allow the user to book a hotel/property	The system should be able to save the reservation and reduce the number of available rooms.	3	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_4	Search Functionality:	This feature should allow users to search for properties based on various filters such as location, price range, property type, and availability dates.	2	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj

Fr_5	Review System:	This feature should allow users to leave reviews for the properties they have stayed in. Users should be able to leave a written review describing their experience.	2	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_6	Messaging System:	This feature should allow users to communicate with each other through an in-app messaging system. Users should be able to send messages to property owners to ask questions about the property, or to discuss rental details such as check-in times and key pickup locations.	1	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_7	Admin Panel:	This feature should allow an administrator to manage the app's settings, listings, users, and other important features.	3	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_8	Property Verification:	The app should have a system in place to verify the authenticity of property listings, such as by requiring property owners to provide proof of ownership or by conducting on-site inspections.	2	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_9	Property Description:	Property owners should be able to provide a detailed description of their property which includes property highlights, amenities, neighborhood attractions, and more.	1	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj

Fr_10	The system should allow the user to cancel a booking.	The system should delete the user's booking from the database if the user chooses to cancel it.	2	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_11	Notifications:	This feature should allow users to receive notifications about important events related to their bookings, such as booking requests, message notifications, or changes to their reservations.	3	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_12	Payment Processing:	The app should offer multiple payment options such as credit card, PayPal, and other payment gateways, to accommodate users with different payment preferences.	3	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_13	Booking Confirmation:	Users should receive a confirmation email or message after booking a property, and property owners should receive a notification of the booking.	3	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_14	The web application has to be responsive	The users should be able to access this web application from many devices.	1	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_15	The system should allow the admin to manage a property	The admin should be able to manage property listings, including adding, editing, and deleting properties, as well as approving or rejecting property submissions from property owners.	2	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj

Fr_16	The system should allow the admin to see the feedback of the user.	The system should allow the admin of the platform to see the feedback of the user and give a response as well.	2	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_17	Lists of hotel and room information	This system needs a list of hotels and the description of the room based on the location chosen by the user. The user needs to decide what to book for so the lists of hotels should be done first.	1	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_18	Booking system	The user has decided what should he book for, so we need a booking system in which the user chooses how many people, how many rooms, what type of rooms is generally preferred, if it has tv or is it allowed to have pets, and so forth	3	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_19	Manager panel	The manager is the owner of the hotel. he sees information about himself, about his accomodation and rooms and what payments are done. he is also responsible for the approval of the booking. There could be thousands of bookings from different people, but the manager will accomodate people that he can or cannot handle.	2	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_20	Payment history of user	The user should be able to see the history of his payments before so that for example he could go there again or just to remember where has he gone and was it cheaper than before or was it more expensive	1	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj

Fr_21	Property inspection	Some locations should be checked in person by someone professional in which the admin has requested for. if the property is approved, the hotel will be shown, otherwise it will not	2	18.04	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_22	Rating System:	This feature should allow users to leave ratings for the properties they have stayed in. Users should be able to rate the property on various factors such as cleanliness, location, and amenities,experience,view, etc.	3	08.05	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_23	The system should allow the super admin to CRUD.	Super Admins should be able to view and manage all system users, including CRUD operations on Admins, Managers, and Guests.	3	08.05	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_24	The system should allow the admin, manager to cancel a booking.	The system must provide the admin and manager the capability to cancel a booking made by a guest if needed. This feature is necessary to provide flexibility to the admin and manager to cancel a booking for any reason, such as if there is a conflict in the schedule or if the property is no longer available.	2	08.05	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_25	The system should allow all users to reset their password	The system should allow all users to reset their password by clicking on “I forgot my password” and receiving a link to their verified email address	2	08.05	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_26	The system should allow users to postpone a reservation	The system should allow users to postpone a reservations for a later date , by messaging the host .	2	08.05	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj

Fr_27	The platform should provide guest to 24/7 access	The platform should provide guests with access to 24/7 customer support, assistance with booking issues , payment problems etc	3	08.05	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_28	The platform should allow hosts to upload high-quality images on their listings.	By allowing hosts to provide high-quality images can be more engaging and attract guests to book their stay on the platform	11	08.05	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_29	A user can only see his profile.	The platform should not allow users to access other profiles except their profiles.	1	08.05	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj
Fr_30	The platform should encrypt all sensitive data.	The platform should encrypt all sensitive data including personal information and financial transactions.	3	08.05	Dario Pipa Sara Martiri Enkel Murati Elisa Haxhillazi Armen Ostaku Kleidi Kertusha Klevi Mecaj

3.2 Non-Functional Requirements

3.2.1 Product Requirements

3.2.1.1 User Interface Requirements

The user interface for the web applications should be compatible to any browser in order for the user to access it from Desktop or Mobile.

In addition to functions required, we are going to describe the characteristics of each interface, which are supported from the sketches attached at the Appendix D.

The User interface could be grouped in 5 main interfaces:

- Home page Interface

Which will contain:

- Search Bar: A text box where users can enter their desired location, check-in and check-out dates, and number of guests.
- Explore section: A section that provides curated options for popular destinations, experiences, and accommodations.
- Navigation bar: A menu bar that allows users to navigate to different pages on the Airbnb website, such as "Host", "Experiences", "Help", and "Sign Up/Log In".
- Categories section: A section that displays popular categories of accommodations, such as "Entire Homes", "Unique Stays", "Pet-Friendly", etc.
- Footer: A section at the bottom of the page that contains links to additional information, such as "About Us", "Careers", "Press", and "Policies".

- Log In Interface

Which will contain:

- Username/Email: A text box where the user can enter their registered email or username associated with their Airbnb account.
- Password: A text box where the user can enter their password.
- "Remember Me" checkbox: An option that allows the user to remain logged in even after closing their browser.
- "Forgot Password" link: A hyperlink that redirects the user to a password reset page if they forget their password.
- "Sign Up" link: A hyperlink that redirects the user to the Airbnb registration page if they don't have an account yet.
- "Login" button: A button that submits the login credentials entered by the user and logs them into their account.

- Super admin Interface

Which will contain:

- User Management: A section that allows superadmins to manage user accounts, including creating, deleting, or modifying user accounts, roles, and permissions.
- Analytics and Reporting: A section that provides data analytics and reporting tools to help superadmins monitor and analyze data, including metrics on user activity, system performance, and other relevant data.
- Content Management: A section that allows superadmins to manage content, such as uploading or deleting files, updating web pages, and creating or modifying content categories.
- Settings: A section that provides access to system settings and configurations, including payment settings, and other system configurations.
- Help and Support: A section that provides access to help and support resources, such as a knowledge base, community forums, or contact information for technical support.
- Log out: A button that will terminate the current session and will resent the user to the main page.

- Admin Interface

Which will contain:

- Navigation menu: A list of options or links that allow the admin to navigate to different areas of the admin dashboard.
- User management: An area where the admin can manage user manager accounts, including creating new accounts, updating account information, and deleting accounts if necessary.
- Listings management: An area where the admin can manage listings, including adding new listings, editing existing listings, and deleting listings if necessary.
- Reservation management: An area where the admin can manage reservations, including approving or rejecting reservation requests, modifying reservations, and canceling reservations if necessary.
- Analytics dashboard: A section that displays key performance indicators (KPIs) and analytics related to the Airbnb platform, such as the number of active users, average booking rates, and revenue generated.
- Customer support tools: A section that provides tools for customer support, including the ability to respond to customer inquiries, resolve disputes, and provide refunds if necessary.
- Log out: A button that will terminate the current session and will resent the user to the main page.

- Manager Interface

Which will contain:

- Listings: A section that displays all the listings managed by the user, along with their current status, occupancy rates, and other relevant details.
- Reservations: A section that shows all the upcoming and past reservations for the managed listings, along with guest details, booking dates, and payment status.
- Messaging: A section that allows the user to communicate with guests directly through the Airbnb platform, view message history, and respond to inquiries or requests.
- Reviews: A section that displays all the reviews received by the user's listings, along with ratings, comments, and response options.
- Analytics: A section that provides data on the user's performance metrics, such as occupancy rates, revenue, and guest satisfaction scores, and allows the user to analyze and compare data across different time periods.
- Settings: A section that allows the user to customize their account and listing settings, including pricing, availability, and amenities.
- Log out: A button that will terminate the current session and will resent the user to the main page.

- Guest Interface

Which will contain:

- Reservation Details: The guest dashboard may display information related to the guest's current and past reservations, such as the check-in and check-out dates, reservation status, and the reservation's host and property details.
- Booking Requests: The guest dashboard may provide a section where guests can submit booking requests for new reservations.
- Messages: The guest dashboard may allow guests to communicate with their hosts through a messaging system to discuss their reservations, ask questions, and get help.
- Reviews: The guest dashboard may display reviews left by other guests about their experiences with the hosts and properties they have stayed with.
- Personal Profile: The guest dashboard may include a section where guests can manage their personal information, such as their name, contact details, payment methods, and preferences.
- Help Center: The guest dashboard may offer a help center with FAQs, support articles, and other resources to assist guests with their questions or issues.

3.2.1.2 Learnability

- Super admins, admins and managers should be able to master using the system within a few hours, but may need some specific training on how to handle the reservation. The guests and unregistered user will not need a specific training since the system will be intuitive.
- This documentation can serve as a user guide to super admins, admins and managers
- In case of an error, a specific and detailed message will be shown to the user in order for them to understand what went wrong.
- The user is responsible for his/her own actions.

3.2.1.3 Accessibility

- Each user will provide their email and password at the time they are registered at the system.
- Super admins, admins, managers and guests can access the specific parts of the system. • The unregistered users can only access the homepage and it's components but will be able to explore it without being able to make any reservation.
- The registered users can access the system at any time and at any place.

3.2.1.4 Efficiency

- Each operation will be fast and in real time.
- Once the users have learned the system they will be able to perform each operation within minutes.

3.2.1.5 Memorability

- The system is intuitive hence, it is not a problem if you 'vaguely remember' how to use it.
- If the users return to the design after a period of not using it they will be able to re-establish proficiency within the first hour.
- The user interfaces are designed to be easy understandable by the user (pictures, icons, buttons, descriptions etc.)

3.2.1.6 Errors

- The error rate is lower than the current error rate.
- Each time sensitive data is entered in the system double check procedure is applied where the user confirms the entered data.
- If an error occurs it can be edited and corrected immediately.

3.2.1.7 Satisfaction

- The system is user-friendly and it is very easy to use.

3.2.1.8 Capacity

This application will be developed to cover all the necessities of a booking website. The application will work at the same time for all user types. It will work on real time, so every change made will be reflected immediately to the other users (based on their clearance).

Every user will use the same database, therefore if multiple requests are made to the server the requests will form a query slightly delaying the process. To increase the capacity and to lower the amount of times this happens the user will make the changes storing them in their computer then they will be sent to the database. This way even if there is a delay it will allow them to continue their job.

The application will be stored in a web server. The applications itself is not large and the database that we are going to use does not occupy a large space either.

3.2.1 Organizational Requirements

3.2.1.1 Availability

The app should be highly accessible, with a target uptime of 99.9%, allowing users to use the service at any time and from any location. The app should have a strategy in place to ensure that it is available even if the server or network goes down.

3.2.1.2 Latency

To give consumers a smooth experience, the app should have minimal latency. The app should have a structure in place to guarantee that the response time is as short as possible and that the user experience is as smooth as possible.

3.2.1.3 Monitoring

- The system will be built to be secure and reliable. The user interfaces will be easy and there should be no cases where the system crashes.
- Periodic reports shall be generated by the system maintenance group. These reports shall be used not only to detect problems but also to find possible ways to improve the system.
- For most of the possible error scenarios, informative messages will be prepared to be shown to the user, in order for them to know what the problem is.

3.2.1.4 Maintenance

The system will put security and dependability first, and it will include intuitive user interfaces to avoid system crashes. The maintenance team will provide reports on a regular basis to pinpoint issues and enhance the system. Field validation will be used to verify accurate entry, and users will get error warnings as needed. For probable error scenarios, informative messages will be generated in order to help users comprehend and resolve any potential problems.

3.2.1.5 Standards Compliance

Our platform will follow established standards and regulatory criteria to guarantee a flawless user experience and keep the confidence of the users. There will be regulations for legal issues, and abiding by data privacy laws (**GDPR**). User data will be encrypted and protected and to guarantee the quality and integrity of the data , userIDs and other information will be kept up to date in accordance with industry standards

- The system will be web-based; therefore, it will operate the same regardless of the operating system.
- All you need is a computer or mobile phone and an Internet connection.

3.2.2 External Requirements

3.2.2.1 Security

The information kept in the system's database is considered to be sensitive information. Therefore, we should make sure that the security of our system is high. The app should implement appropriate trust and safety measures, such as identity verification, fraud detection, and user reviews, to promote a safe and trustworthy environment for users.

3.2.2.2 Protection

- Encrypt the most sensitive information such as passwords using hashing method to protect privacy.
- We will keep track of the activity of each user, such that in case of a problem the user will be held responsible.
- The receptionist is responsible for the personal data authenticity of the user he/she enters; hence the system is not responsible.
- To make sure that some action is intentional and not accidental, most of the actions of the users are protected by a pop up window to confirm that action.
- Each users will see only the information related to him/her.

3.2.2.3 Authorization and Authentication

The user authentication will be using username, password .

Authorization will be based on the user type. Each user will access only the respective information.

Using sessions for the currently logged user.

If the user tries to log in with the wrong credentials a message will be shown to him/her.

3.3 Domain requirements

Our platform's domain criteria are designed to provide a marketplace where hosts and guests may interact in a safe and secure way. Our website lets travelers look for and reserve distinctive listings while also giving hosts a method to advertise.

While guests may look for houses, make reservations, and post reviews, hosts can maintain their listings, accept bookings, and interact with visitors. Additionally, staff of Airbnb have control over a number of platform-related functions, including payments, dispute resolution, and customer support.

Our overall objective is to develop a platform that encourages confidence, security, and safety for customers.

4 Software Design / Diagrams

4.1 Requirements Analysis

4.1.1 User Scenarios

4.1.1.1 User Scenarios List

Nr	Name	Description
US_01	User logs in	Users: superAdmin, admin, managers ,guests log in using username and password
US_02	Change password	Users: superAdmin, admin, managers ,guests change their password
US_03	Add a new user	SuperAdmin creates an account for a new user
US_04	Download reports	SuperAdmin,manager ,admin generate and downloads revenue generated,booking analytics
US_05	Search a property	Guests:Search for a specific property
US_06	Delete user	SuperAdmin/admin can delete an account of an existing admin/manager
US_07	Make a booking	Guests make a booking for a listing .
US_08	Booking confirmation	Guest should download their booking information as a PDF
US_09	View profile	SuperAdmin,Admin,managers and guests can view their profile
US_10	Guests contacts Hosts and viceversa	Guests can contact the admin/manager by the messaging system in the app and viceversa.
US_11	Host creates a listing (Host-admin/manager)	Admin/Manager can create listings for their accommodation .
US_12	Admin/Manager deletes a listing	Admin/Manager can delete any listings they have made
US_13	Download payment receipt	Guest can download their payment receipt
US_14	Leave feedback and ratings	Guests can leave feedback about the service offered by the hosts and rate the property on various factors .
US_15	User logs out	Users: superAdmin, admin, managers ,guests log out from their accounts
US_16	Admin/Manger updated a listing	Admin/Managers can update any information about on of their existing listings.
US_17	Recover password	Users: superAdmin, admin, managers ,guests log recover their password if forgotten
US_18	Booking Cancellation	Admin/Manager/Guests cancels booking
US_19	Payment Processing	Users completes the payment process for a reservation

4.1.1.2 User Scenarios extended

US_01 – User logs in

- a. User chooses his user type:admin/manager /guest
- b. User is redirected to the log in page
- c. User enters his username and password
- d. User checks the reCaptcha ‘I am not a robot’
- e. User presses the log in button
- f. If data is correct the user is redirected to his profile page
- g. If data is not correct an error message will be shown and user repeats the process from step b.

US_02 – Change password

- a. User logs in following the steps in **US_01**.
- b. User chooses the menu “Change Password”
- c. User types his old password and his new password (2 times)
- d. User presses the button “Save Changes”
- e. If the old password is correct and if the new password is the same in both fields the user is alerted: “Password was changed successfully!”
- f. In case the old password is wrong or the new password is not the same in both fields then user is alerted: “Password was not changed. Please try again.”

US_03 – Add a new admin/manager

- a. SuperAdmin/Admin logs in following the steps US_01
- b. SuperAdmin/Admin clicks on “Add a New Admin/Manager”
- c. SuperAdmin/Admin fills all the empty fields
- d. SuperAdmin/Admin clicks the button “Add admin/manager”
- e. Alert: Are you sure you want to continue? YES/ NO
- f. If NO, do nothing, we stay at the same page
- g. If YES, system validates data according to the specified requirements
- h. If validation is passed successfully, the data is saved in the database and the account is created. An informative message “Admin added successfully!” will be shown and the SuperAdmin/Admin is redirected to his/her home page.

US_04 - Generate and Download Revenue and Booking Analytics Reports

- a. Hosts logs in following the steps in US_01
- b. Hosts clicks on the "Reports" menu
- c. Hosts selects "Revenue and Booking Analytics" from the report options
- d. Hosts selects a date range for the report
- e. Hosts clicks on the "Generate Report" button
- f. The system processes the request and generates the report

- g. The report is displayed on the screen
- h. Hosts clicks on the "Download Report" button
- i. The report is downloaded as a PDF file

US_05- Guests searches for a specific property

- a. Guests logs in following the steps in US_01
- b. Guest clicks on the "Search" button.
- c. Guest enters the name or location of the property in the search bar selects
- d. Guests clicks the "Search" button
- e. If the criteria and the property exists the app displays the details of the property.
- f. Guest can click "Book Now" if the property is available for booking
- g. If the criteria is not meet the app will display a "Property was not found" alert

US_06 – Delete admin/manager

- a. Superadmin/admin searches a user.
- b. Receptionist clicks the button "Delete" for that specific patient
- c. Alert: Are you sure you want to continue? YES/ NO
- d. If NO, do nothing, we stay at the same page
- e. If YES, the information for that patient is deleted from the database. The message "User deleted successfully!" will be shown and the superadmin/admin is redirected to his/her home page.

US_07- Guests makes a booking

- a. Guest logs in following the steps in US_01.
- b. Guest searches for a property following the steps in US_03.
- c. Guest selects the desired property and clicks on "Book now".
- d. Guest is redirected to a booking page with a form.
- e. Guest fills in the booking details such as check-in and check-out dates, number of guests, and any special requests.
- f. Guest reviews the booking details and clicks on "Confirm booking".
- g. Alert: Are you sure you want to confirm this booking? YES/NO
- h. If NO, do nothing, we stay at the same page.
- i. If YES, the system will try to process the payment.
- j. If payment is successful, the booking is confirmed and a confirmation message is displayed with the booking details.
- k. If payment fails, the system will display an error message asking the guest to try again later or contact support for assistance.

US_08: Download Booking Confirmation as PDF

- a. Guest logs in following the steps in US_01
- b. Guest clicks on "My Bookings"
- c. Guest selects the booking they want to download the confirmation for
- d. Guest clicks on "Download Confirmation"
- e. If the download is successful, a message "Downloaded Successfully" is shown.
- f. If the download is not successful, an error message "Download Failed. Please try again later." is shown.

US_09 – View profile

- a. Users(superadmin,admin,manager,guests) views his/her profile
- b. User logs in following the steps in **US_01**
- c. User clicks on "My profile"
- d. User will be redirected to a page with his/her personal information

US_10– Guests contacts admin/manager via messaging system

- a. Guest logs into their account following the steps in US_01
- b. Guest searches for a listing and clicks on it to view more details
- c. Guest clicks on the "Contact host" button
- d. A messaging interface opens up, allowing the guest to type in their message and send it directly to the host
 - e. The guest writes their message and double-checks it before sending
- e. The guest clicks "Send"
- f. The message is sent to the host through the app messaging system
- g. If the message is sent successfully, the guest will see a confirmation message that their message has been sent
- h. The host will receive the message and can respond via the messaging system, which the guest can access through their app account.

US_11- Host creates a listing (Host-admin/manager)

- a. Host logs into their account on the app.
- b. Host clicks on the "List Your Space" button on the homepage.
- c. Host enters the address of their property, followed by the property type (e.g. apartment, house, villa), and the number of guests the property can accommodate.
- d. Host uploads photos of the property and writes a detailed description, including amenities and any special features.
- e. Host sets the availability and pricing of the property, including any additional fees or taxes.
- f. Host reviews the listing and makes any necessary edits or updates.
- g. Host clicks "Publish" to make the listing live on the Airbnb platform.
- h. Platform confirms the listing has been published and is now available for guests to book.

US_12: Admin/Manager deletes a listing

- a. Admin/Manager logs in following the steps in US_01.
- b. Admin/Manager navigates to the page that lists all the available listings.
- c. Admin/Manager selects the listing they want to delete.
- d. Admin/Manager clicks the "Delete" button.
- e. Alert: "Are you sure you want to delete this listing?" YES/NO
- f. If Admin/Manager clicks "NO", do nothing, stay on the same page.
- g. If Admin/Manager clicks "YES", the system deletes the listing.
- h. System displays a message "Listing successfully deleted".
- i. Admin/Manager is redirected to the page that lists all available listings, and the deleted listing is no longer visible.

US_13: Download payment receipt

- a. Guest logs in to their account on the app following the steps in US_01.
- b. Guest clicks on "My Bookings" to see a list of their bookings.
- c. Guest selects the booking for which they want to download the payment receipt.
- d. Guest clicks on "Download payment receipt" button.
- e. The system generates a PDF file of the payment receipt.
- f. The system displays a message that says "Your payment receipt has been generated and is ready for download".
- g. Guest clicks on the "Download" button to download the PDF file.
- h. The PDF file is downloaded to the Guest's device.
- i. The system returns to the "My Bookings" page.

US_14 – Leave feedback

- a. Guest logs in following the steps in **US_01**
- b. User clicks "Leave feedback"
- c. He will leave comments about the service
- d. Alert: Are you sure you want to leave feedback? YES/ NO
- e. If NO, do nothing, we stay at the same page
- f. If YES, the feedback will be saved in the database and will be shown in statistics

US_15 – User logs out

- a. User logs in following the steps in "Scenario - User logs in"
- b. User follows some of the scenarios listed above
- c. User clicks "Log out"
- d. User will be logged out from the system and he will be redirected to the main page

US_16: Admin/Manager updates a listing

- a. Admin/Manager logs in following the steps in US_01.
- b. Admin/Manager clicks on "Listings" menu.
- c. Admin/Manager selects the listing they want to update.
- d. Admin/Manager clicks on the "Edit" button.
- e. Admin/Manager makes the necessary changes to the listing information.
- f. Admin/Manager double-checks the changes they've made.
- g. Admin/Manager clicks on the "Save" button.
- h. Alert: "Are you sure you want to save these changes?" YES/NO
- i. If NO, do nothing, stay on the same page.
- j. If YES, the system will update the listing information.
- k. If the update is successful, a message "Listing information updated successfully!" will be shown, and the Admin/Manager will be redirected to the Listings page.

US_17: User recover passwords

- a. User clicks on the "Forgot Password" link on the login page.
- b. The system prompts the user to enter their email address associated with their account.
- c. User enters their email address and clicks "Submit".
- d. The system verifies that the email address is valid and associated with an existing account.
- e. If the email address is valid, the system sends a password reset link to the user's email address.
- f. User checks their email and clicks on the password reset link.
- g. The system prompts the user to enter a new password.
- h. User enters a new password and clicks "Submit".
- i. The system verifies that the password meets the password requirements.
- j. If the new password is valid, the system updates the user's password and redirects them to the login page.
- k. User can now login with their new password.

US_18: User (Admin/Manager/Guests) cancels booking

- a. The guest logs into their account using their credentials.
- b. The guest navigates to the booking management section.
- c. The guest selects the specific booking that needs to be canceled.
- d. The guest chooses the option to cancel the booking.
- e. A confirmation prompt appears, asking the guest to confirm the cancellation with a "YES" or "NO" option.
- f. If the guest selects "NO," no further action is taken, and they remain on the same page.
- g. If the guest selects "YES," the system updates the booking status to "Cancelled."
- h. If applicable, the system initiates a refund process based on the cancellation policy.
- i. The user (guest) and the host are notified about the booking cancellation.
- j. The guest is redirected to the appropriate page based on the website's design and user flow.

US_19: Payment Processing

- a. The user initiates the payment process by selecting a listing and confirming the reservation.
- b. The website presents the payment options to the user (e.g., credit card, PayPal).
- c. The user selects a payment method and provides the necessary details.
- d. The website securely transmits the payment information to the payment gateway.
- e. The payment gateway processes the payment and sends a confirmation to the website.
- f. The website updates the reservation status and notifies the user of the successful payment.

4.1.2 User Cases

UC_1	User logs in
Summary	User enters personal information to access his account.
Actor	SuperAdmin / Admin/ Manager/Guests
Description	In order to access their respective accounts, users must provide their personal information, including a valid username and password. Upon navigating to the login page, users enter their credentials into the designated fields. The system verifies the correctness of the provided information against the stored user database.
Precondition	User must have an active account
Alternatives	The user can access only one account at time and can have only one role.
Post Condition	User is logged on his account.

UC_2	User changes password
Summary	User goes to the corresponding page to change his password.
Actor	SuperAdmin / Admin/ Manager/Guests
Description	When users wish to change their password, they can navigate to the password change page within their account settings. This functionality is available to users who are logged into their active accounts. To initiate the password change process, the user is prompted to enter their old password, ensuring that the request is authorized.
Precondition	User must have an active account and be logged in the moment they want to change the password . The old password must be correct and the User must type the new password twice and be different from the current password
Alternatives	If the fields are typed incorrectly, an alert will show and the user can try again
Post Condition	After saving the user will be redirected to log in with the new password .

UC_3	Add a new admin/manager
Summary	SuperAdmin / Admin create new admins and managers if needed.
Actor	SuperAdmin / Admin

Description	SuperAdmin/Admin accesses the admin/manager management page and fills in the required fields with the new admin/manager's personal information, such as username, password, email, name, and role. If everything is correct, a new admin/manager will be added to the system.
Precondition	The SuperAdmin/Admin must have the proper authorization to add a new admin/manager.
Alternatives	If the inputs are incorrect or incomplete, the system will show an error message, and the SuperAdmin/Admin must correct the form before resubmitting.
Post Condition	A new admin/manager is added to the system with the provided personal information and can log in to their account using their username and password.

UC_4	Generate and Download Revenue and Booking Analytics Reports
Summary	User enters personal information to access his account.
Actor	SuperAdmin / Admin/ Manager
Description	In this scenario, SuperAdmin, Admin, and Manager users are granted access to a specialized feature that allows them to generate and download reports related to revenue generated and booking analytics. To utilize this feature, users must enter their personal information, such as username and password, to log into their respective accounts. This authentication process ensures that only authorized users with appropriate access privileges can generate and download the reports.
Precondition	The user must have appropriate access privileges to generate and download reports.
Alternatives	None
Post Condition	The user can download the report in a variety of formats, such as PDF, CSV, or Excel.

UC_5	Search for a specific property
Summary	Guests search for a specific property based on their preferences
Actor	Guests

Description	When logged into their account, guests are provided with a search functionality that allows them to find a specific property that meets their requirements. Guests can enter the name of the property or specify the desired location they wish to search within. This search feature enables guests to narrow down their options and locate the property they are specifically interested in.
Precondition	Guests must be logged in
Alternatives	There is no match for their properties and the guests is show “No match”
Post Condition	Guest can see the list of properties that match their search filter.

UC_6	Delete admin/manager
Summary	SuperAdmin/Admin remove an admin/manager account from the system
Actor	SuperAdmin/Admin
Description	SuperAdmin/Admin selects the admin/manager they want to remove , clicks on “Delete” button. They press yes on the pop up , that states if you want to continue with this action.Account is deleted after pressing yes.
Precondition	SuperAdmin/Admin must be logged in
Alternatives	None
Post Condition	An admin or manager is removed from the system

UC_7	Guests makes a booking
Summary	Guest books a property for a period of time
Actor	Guests
Description	Guest after logging in , searches for the property he wants for the date he wants , reviews the details and price , and confirms the booking and the payment information.
Precondition	Guest must be logged in , and the property must be available for the dates that he is interested in
Alternatives	The host can decline/accept the booking
Post Condition	The booking is confirmed and guests receives confirmation

UC_8	Download booking confirmation as PDF
Summary	Guests can download their booking confirmation as PDF
Actor	Guests
Description	After guests have logged into their account and completed the booking process, they are provided with the option to download their booking confirmation in PDF format. This confirmation document serves as proof of their reservation and contains essential details such as booking reference, dates of stay, accommodation details, pricing information, and any additional relevant information.
Precondition	Guest must be logged in and have made a booking.
Alternatives	None
Post Condition	A PDF document is downloaded .

UC_9	View Profile and Edit
Summary	Guests or host views their profile information and edit some information.
Actor	Users
Description	Guests or hosts who are logged into the system can conveniently view their profile information, which includes details such as their name, contact information, profile picture, and any other relevant data. By navigating to the profile section, users gain access to a user-friendly interface that presents their information in an organized manner.
Precondition	Guest/Hosts must be logged in.
Alternatives	None
Post Condition	A guest or host is able to view their profile information and change it if they want.

UC_10	Guest contacts Admin/Manager via messaging system
Summary	Guests sends a message to an admin/manager using the messaging system and viceversa
Actor	Guests/Admin/Manager
Description	Guest/Hosts can navigate to the messaging system and create a new message and select the property they want to send it and send it.

Precondition	Guest/hosts must be logged in.
Alternatives	Guest/hosts may not respond
Post Condition	Message is sent and a notification is sent to the receiver .

UC_11	Hosts creates a listing
Summary	Hosts create a new property listing on the platform
Actor	Admin/Manager
Description	Hosts wants to add a new property listing on the platform. They log in in their account and create a new listing by filling in all the necessary information such as property type,location,description and pricing etc.
Precondition	Hosts must be logged in and have permission to create a new listing.
Alternatives	If the hosts enter incomplete information , he can request help to the customer service.
Post Condition	A new property listing is created and made available for guests to book on the platform.

UC_12	Hosts deletes a listing
Summary	Hosts delete an existing property from the platform.
Actor	Admin/Manager
Description	Hosts wants to delete a property listing on the platform. Hosts log in the system go to the property listing they want to delete , select the listing and CONFIRM the deletion. The system than removes the property from the database.
Precondition	Hosts must be logged in and have permission to delete a listing.
Alternatives	None
Post Condition	The property listing is deleted from the system and can no longer be viewed or booked by guests

UC_13	Download payment receipt
Summary	User can download their payment receipt
Actor	Guests
Description	Guests can download their payment receipt by going to their booking and select the “Download”.

	The receipt will be downloaded as a PDF
Precondition	Guest must have made a payment for a booking.
Alternatives	None
Post Condition	Payment receipt is downloaded as a PDF file and the guest can view/print it.

UC_14	Leave feedback
Summary	Guest leaves feedback for a property they have stayed in.
Actor	Guests
Description	After the guest has completed their stay at a property , they can leave a feedback on their experience. This can be a rating or a written comment
Precondition	Hosts must have booked a property and completed their stay in that property.
Alternatives	None
Post Condition	The feedback is published and the Hosts can view and reply to the guest.

UC_15	User logs out
Summary	User logs out of their account
Actor	SuperAdmin/Admin/Manager/Guests
Description	When users wish to end their session and log out of their account, they have the option to do so by locating and clicking on the logout button. This button is typically accessible within the user interface, often found in the account settings or profile section.
Precondition	User must be logged in.
Alternatives	None.
Post Condition	User is logged out.

UC_16	Hosts updates a listing
Summary	Hosts updates an existing property from the platform.
Actor	Admin/Manager

Description	Hosts wants to update a property listing on the platform. They log in in their account and can update a listing by changing in all the necessary information such as property type,location,description and pricing etc.
Precondition	Hosts must be logged in and have permission to update a listing.
Alternatives	None
Post Condition	A property listing is updated with the new information.

UC_17	User recover password
Summary	User recovers his forgotten password.
Actor	SuperAdmin/Admin/Manager/Guest
Description	Users who have forgotten their password can recover it by clicking on the “forgot password” link and follow the steps to reset the password
Precondition	User must have an active account
Alternatives	None
Post Condition	The user’s password is reset and changed and they are able to log back in in their account.

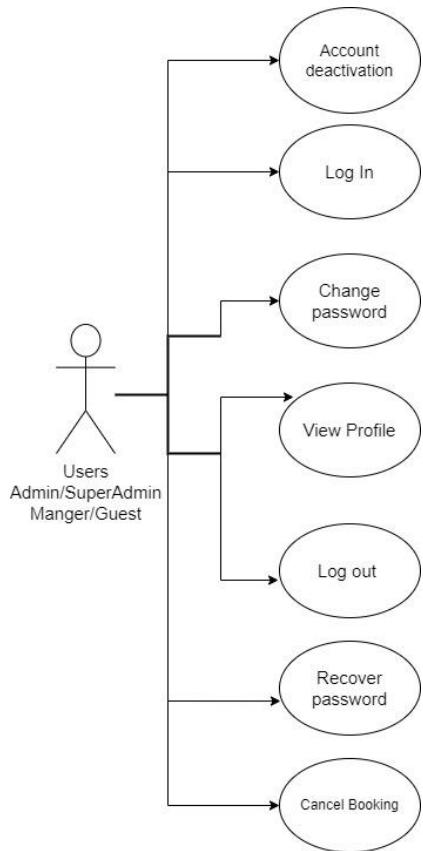
UC_18	User cancels booking
Summary	User cancels a specific booking in their account
Actor	SuperAdmin/Admin/Manager/Guest
Description	Users who have forgotten their password can recover it by clicking on the “forgot password” link and follow the steps to reset the password
Precondition	The guest must be logged into their account.
Alternatives	None
Post Condition	The booking is canceled, the status is updated, and appropriate notifications and redirections are performed.

UC_19	Payment Processing
Summary	User initiates and completes the payment process for a reservation.
Actor	Guest
Description	The user selects a listing and confirms the reservation. The website presents payment options such as credit card or PayPal. The user selects a payment method and provides the necessary details. The website securely transmits the payment information to the payment gateway. The payment gateway processes the payment and sends a confirmation to the website. The website updates the reservation status and notifies the user of the successful payment.
Precondition	The user has selected a listing and confirmed the reservation.
Alternatives	Processing failed, redirect.
Post Condition	The payment is processed, the reservation status is updated, and the user is notified of the successful payment.

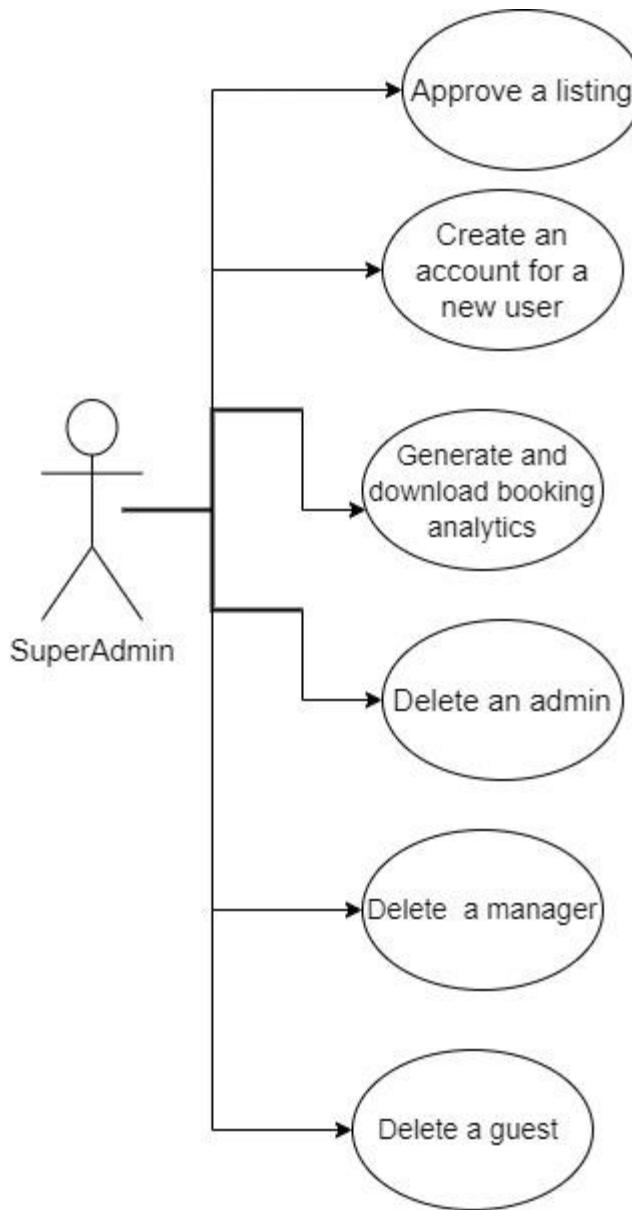
4.2 Behavioral Diagrams

4.2.1 Use Case Diagrams

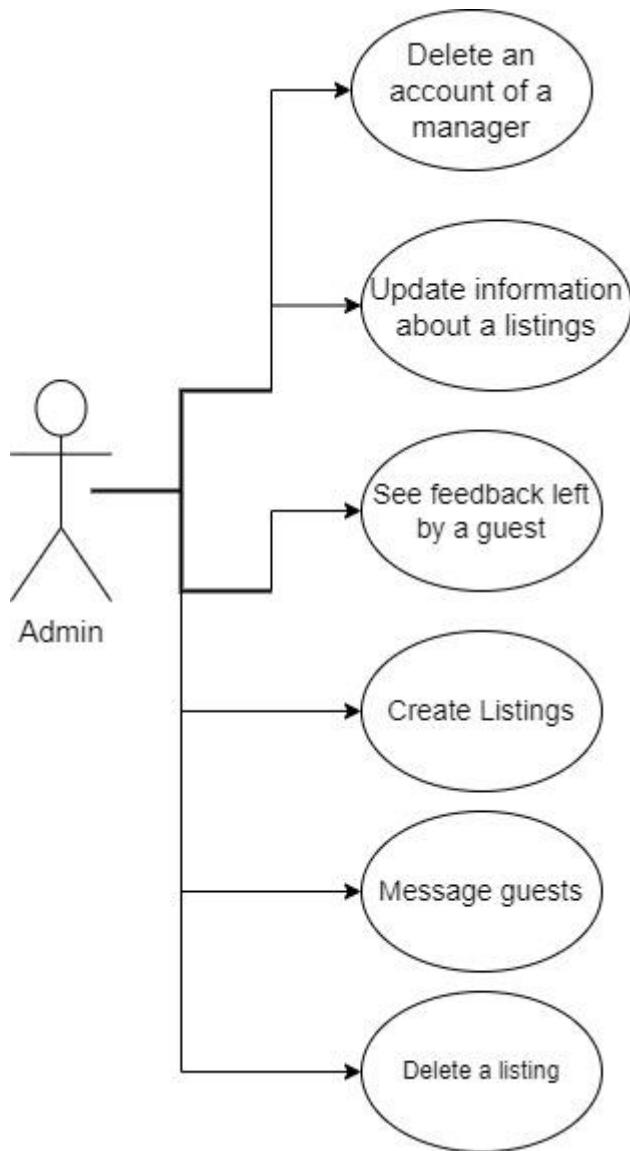
1. Users case



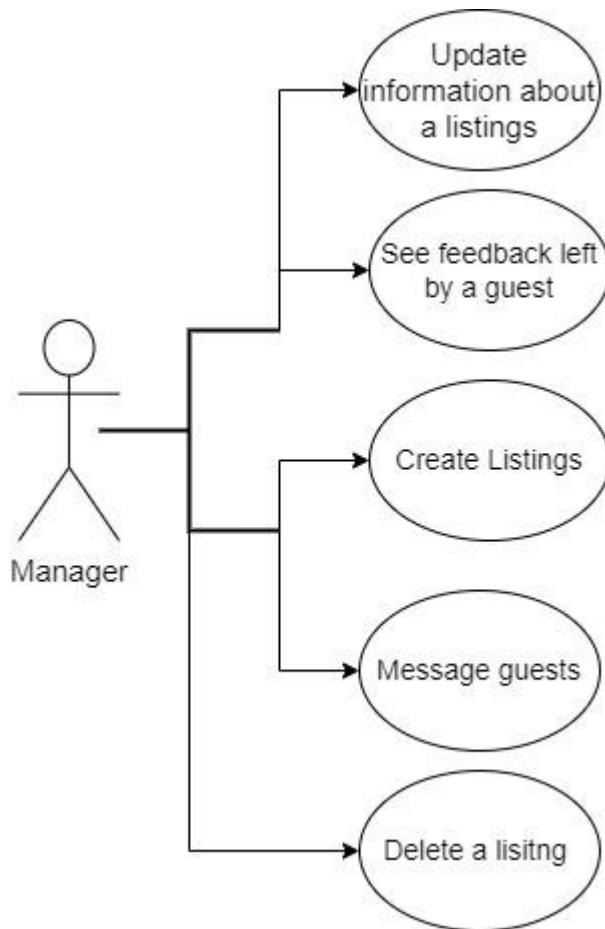
2.SuperAdmin case



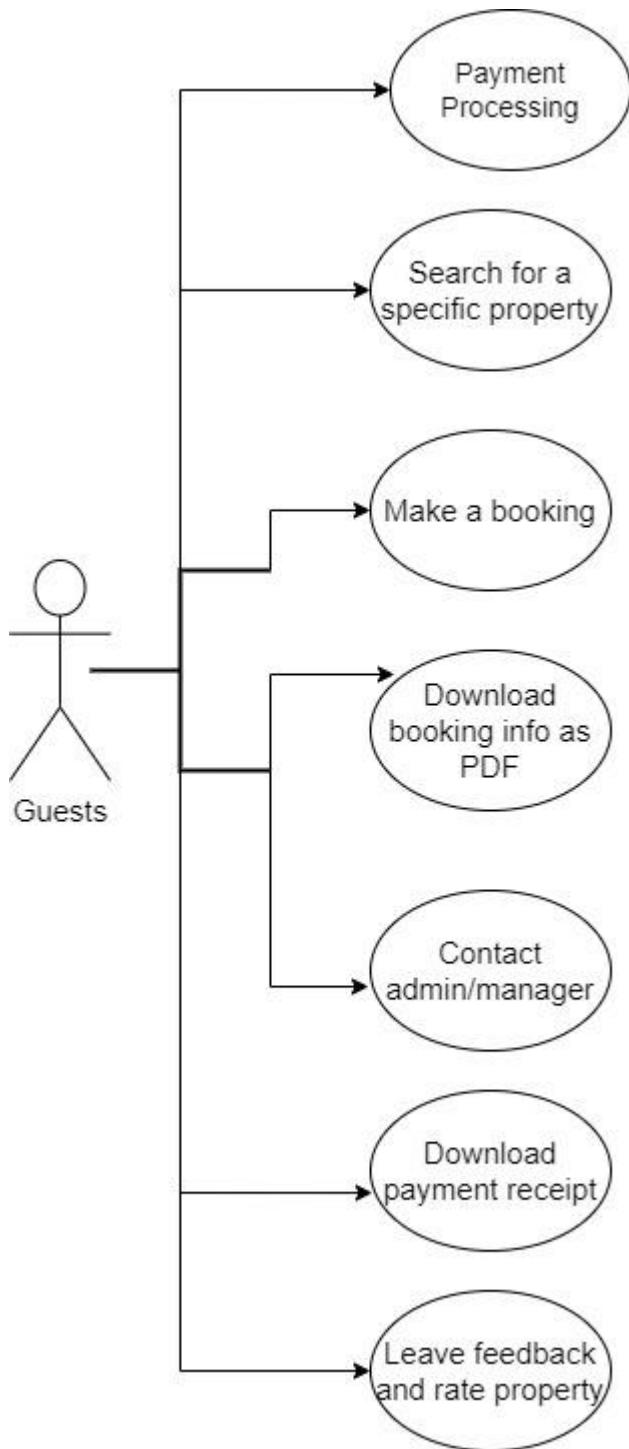
3.Admin case



4. Manager Case

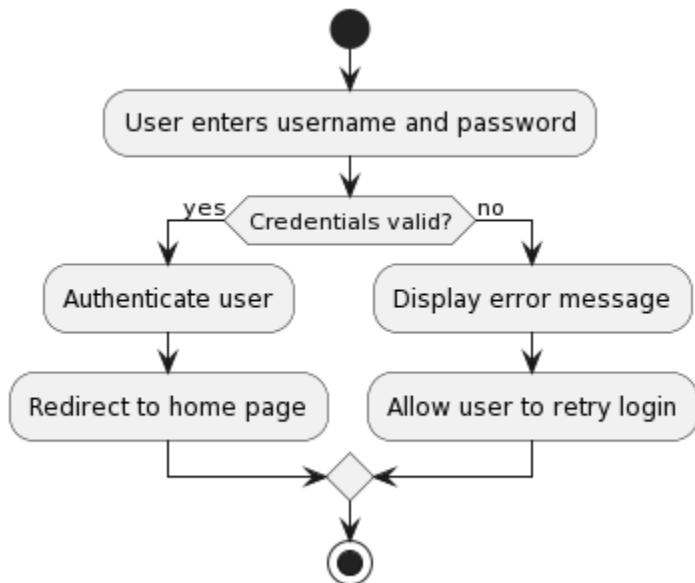


5.Guest Case

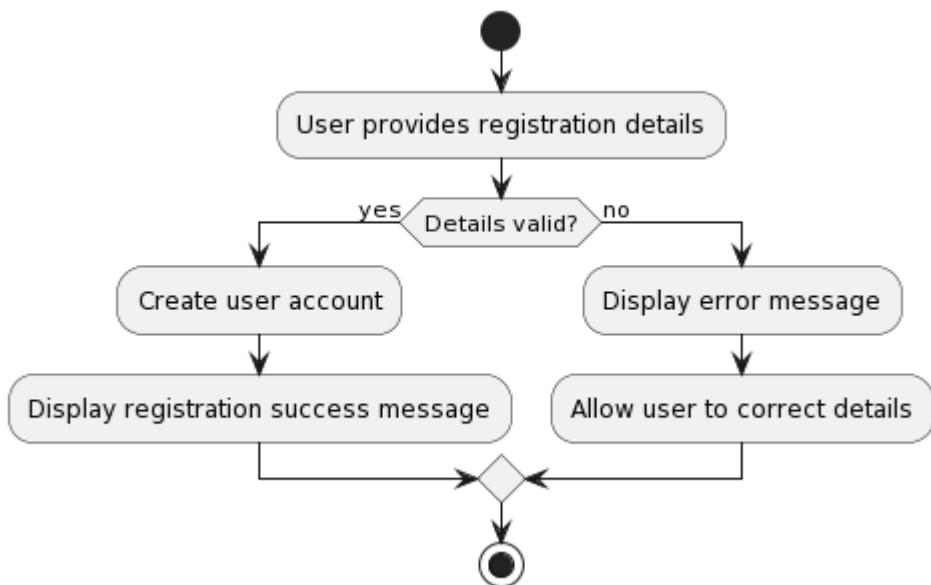


4.2.2 Activity Diagrams

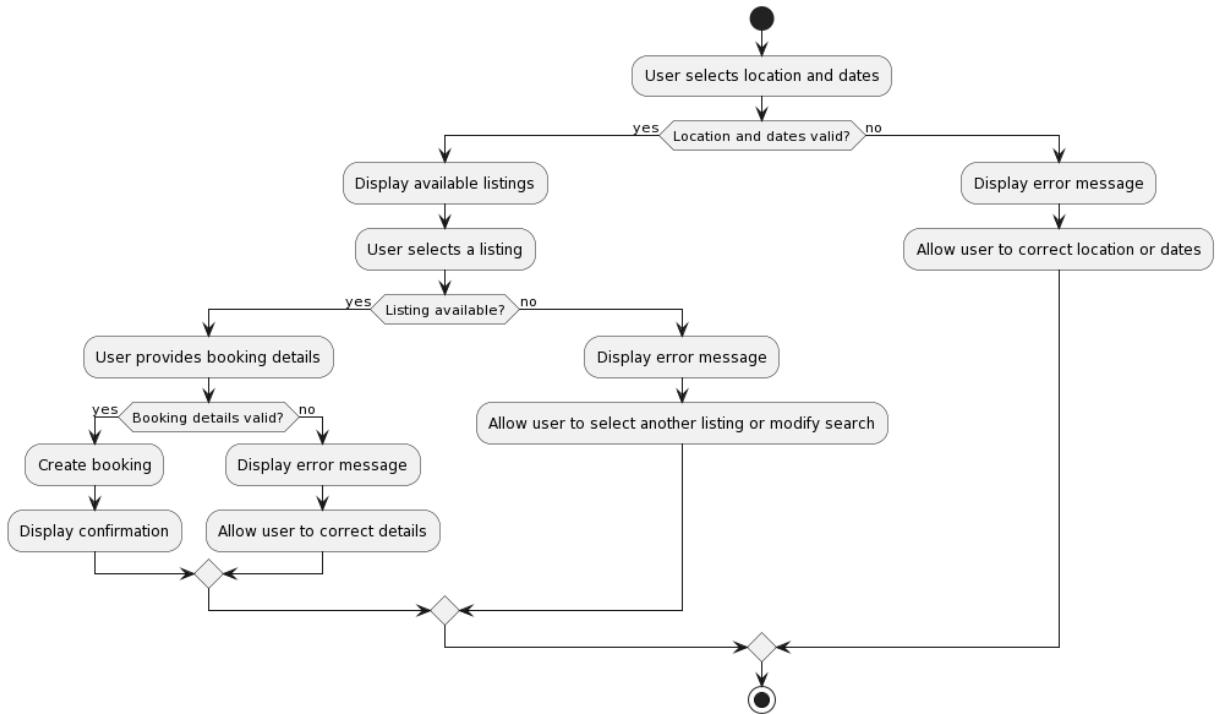
Ad_1-Log in



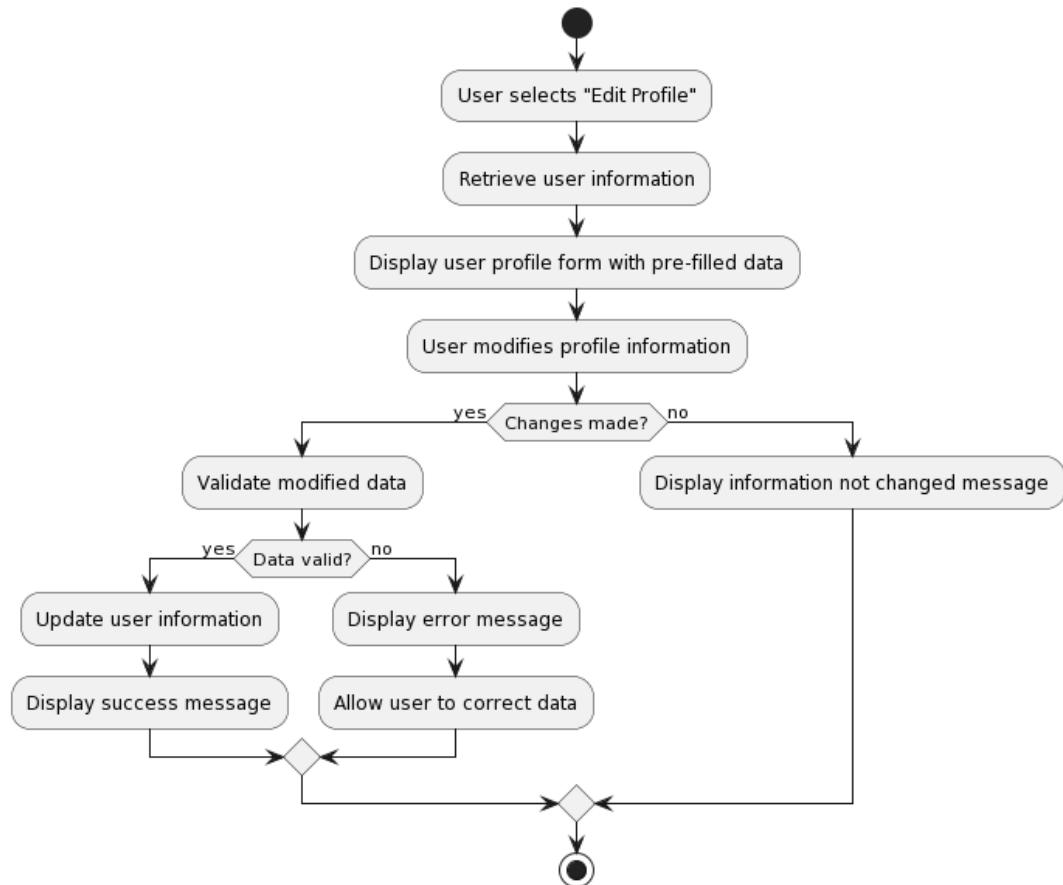
Ad_2-Register



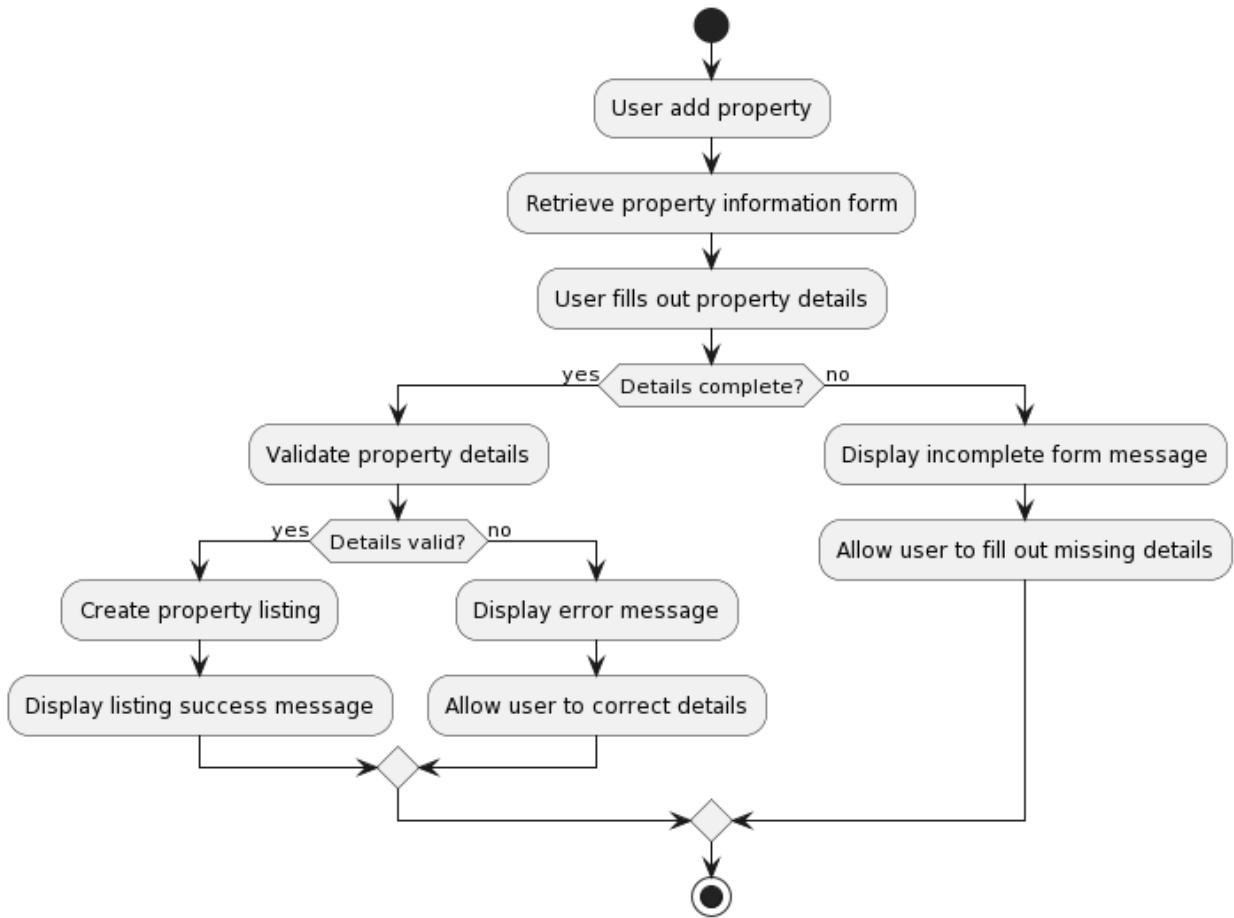
Ad_3-Booking



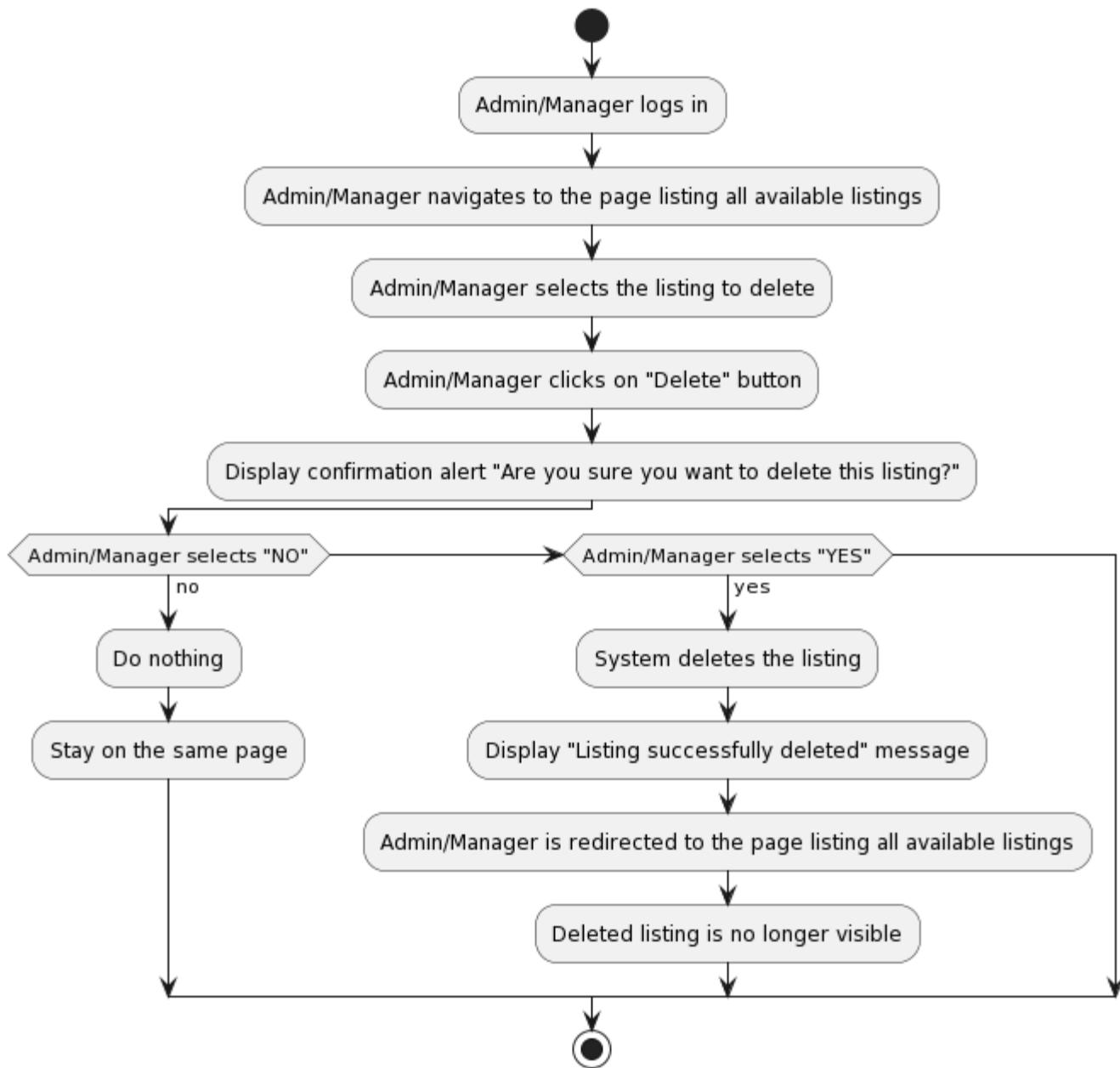
Ad_4-Edit profile



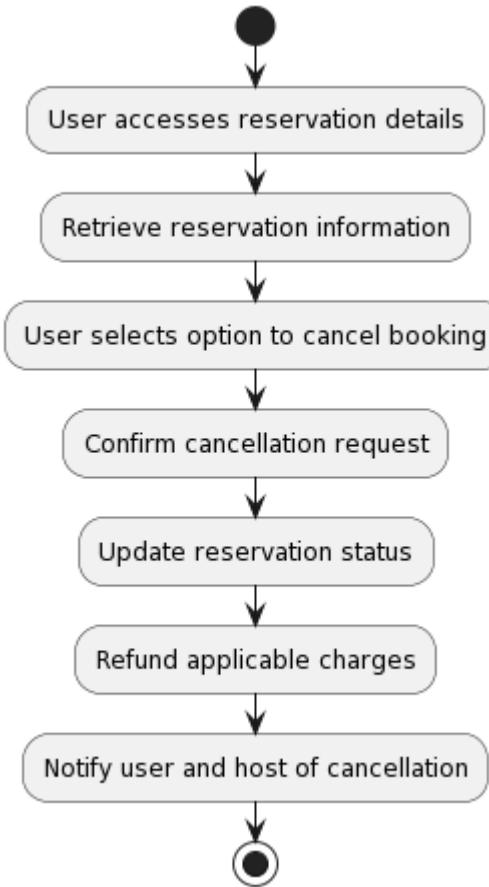
Ad_5-Adding listing



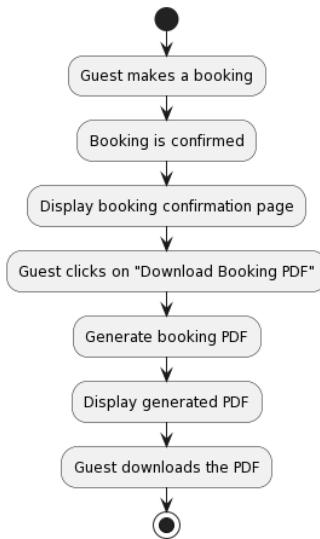
Ad_6-Delete listing



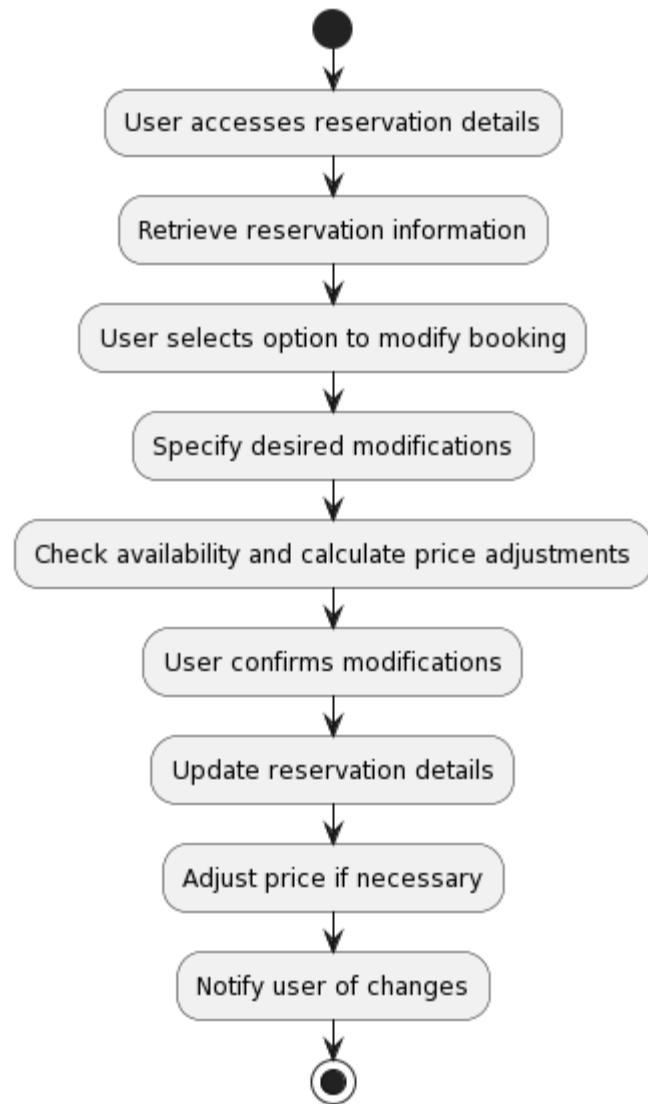
Ad_7-Booking Cancellation



Ad_8-Booking confirmation



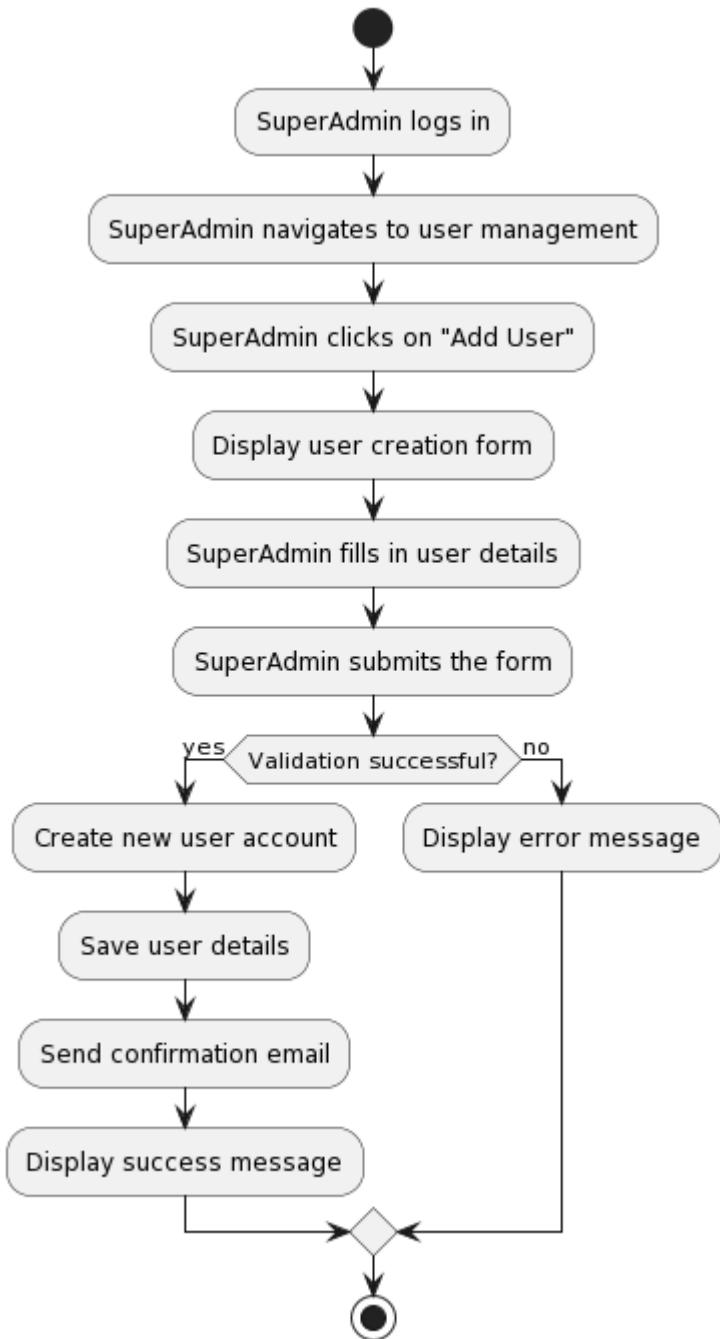
Ad_9-Booking modification



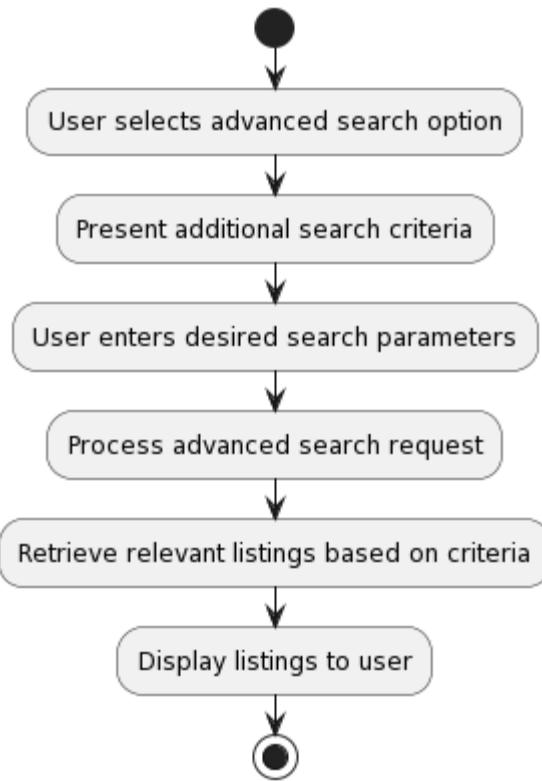
Ad_10-Account deactivation



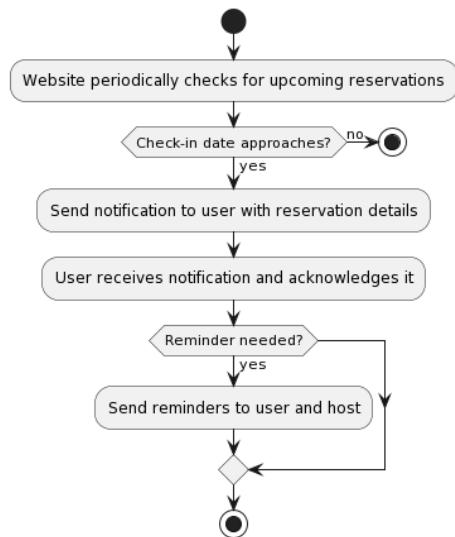
Ad_12-Add new user



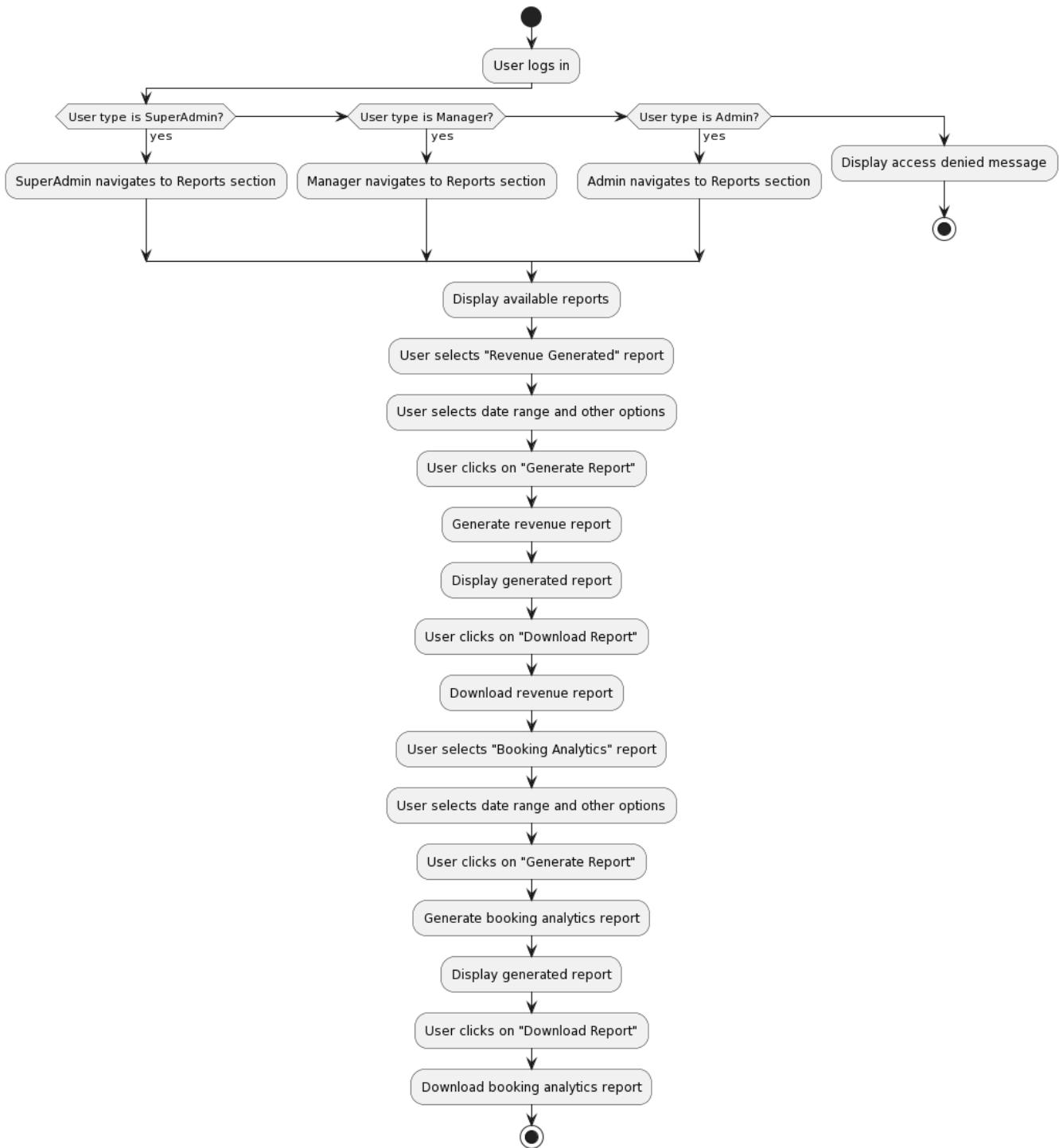
Ad_13-Advanced Search



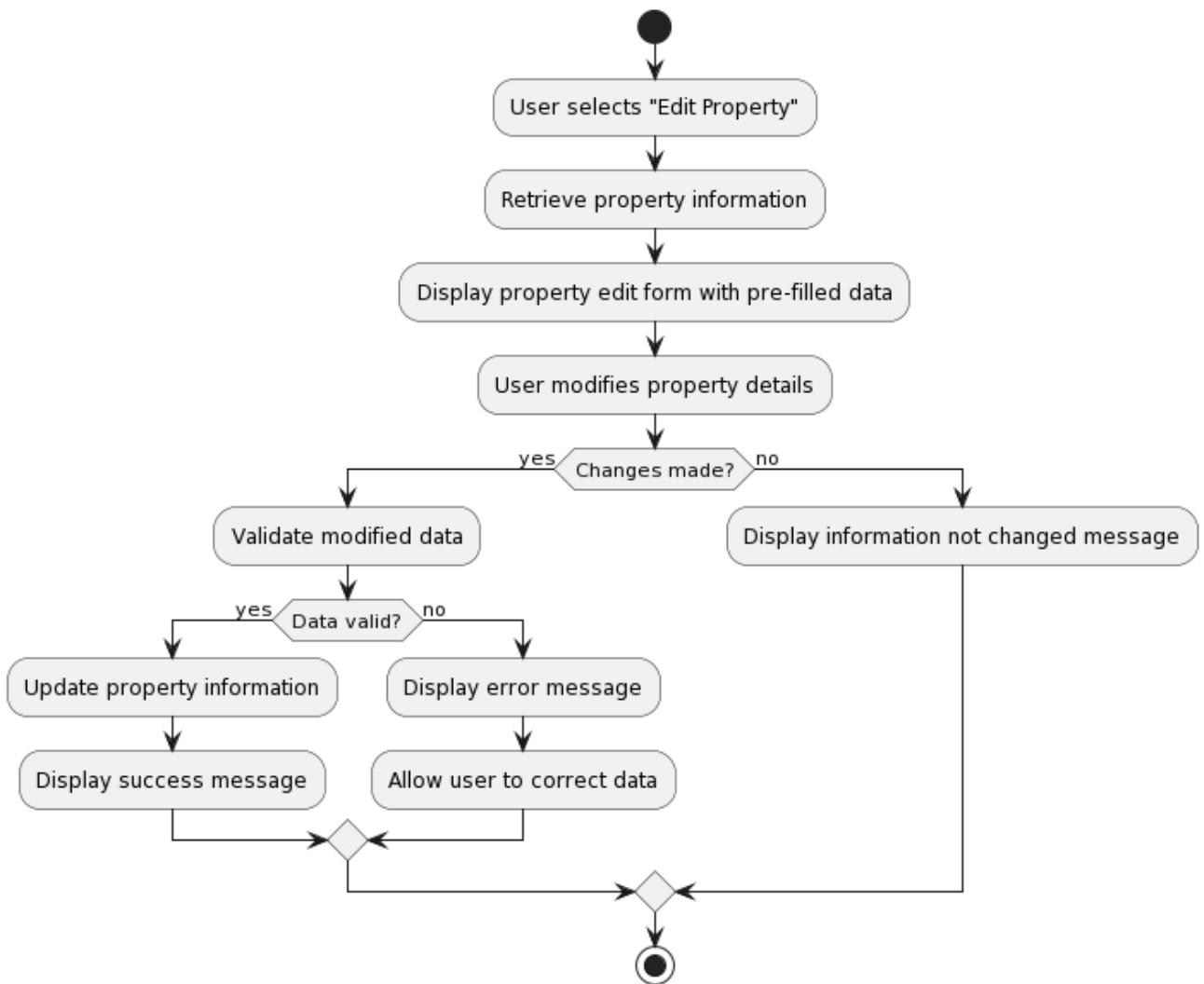
Ad_14-Automatic notification



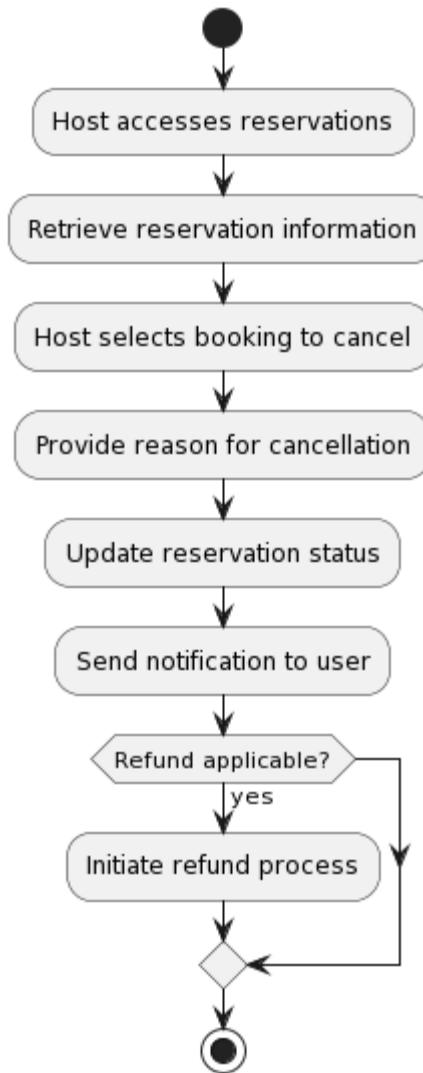
Ad_15-Reports download



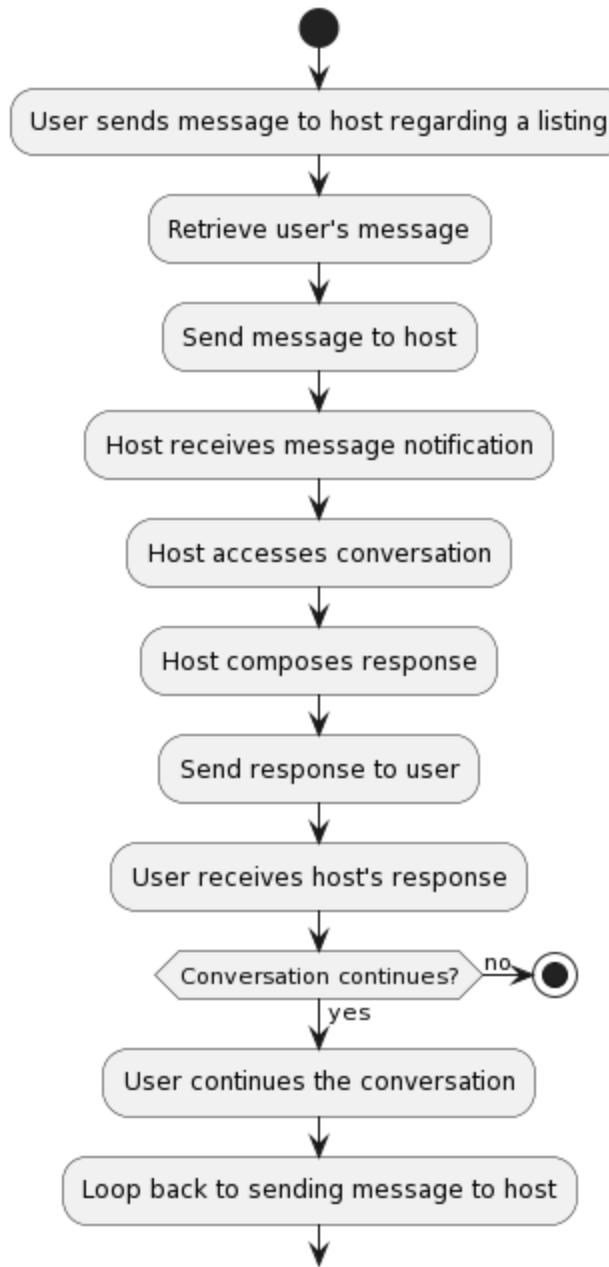
Ad_16-Edit Property



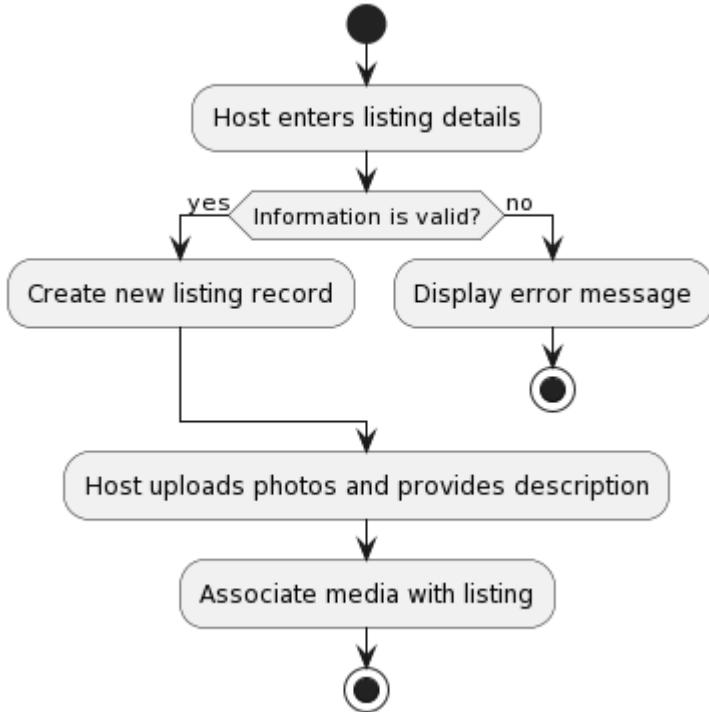
Ad_17-Host Cancellation



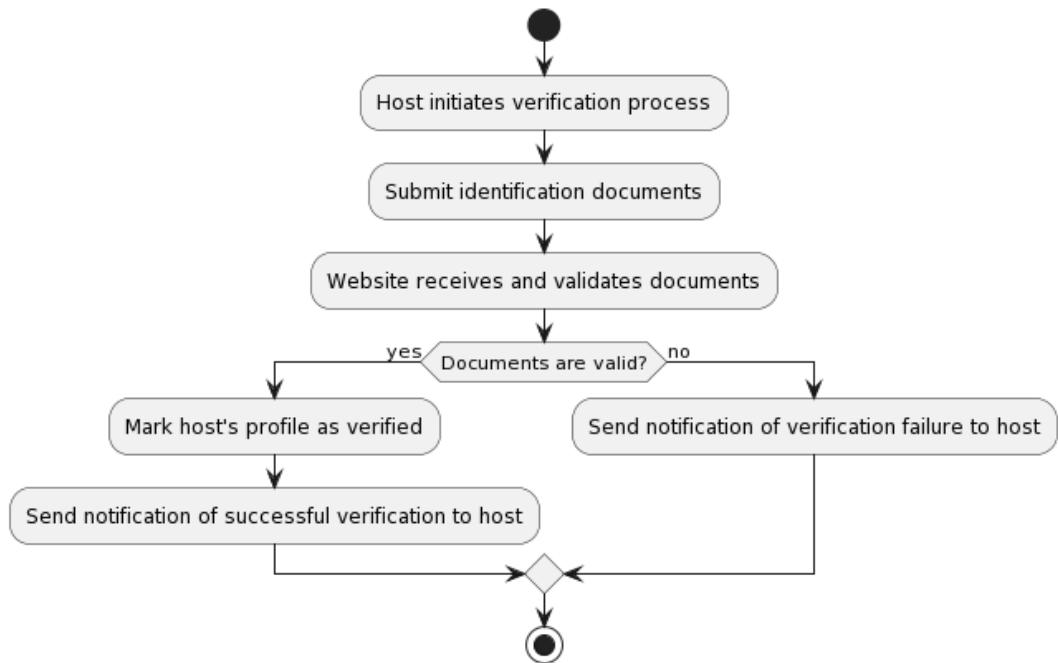
Ad_18-Host Communication



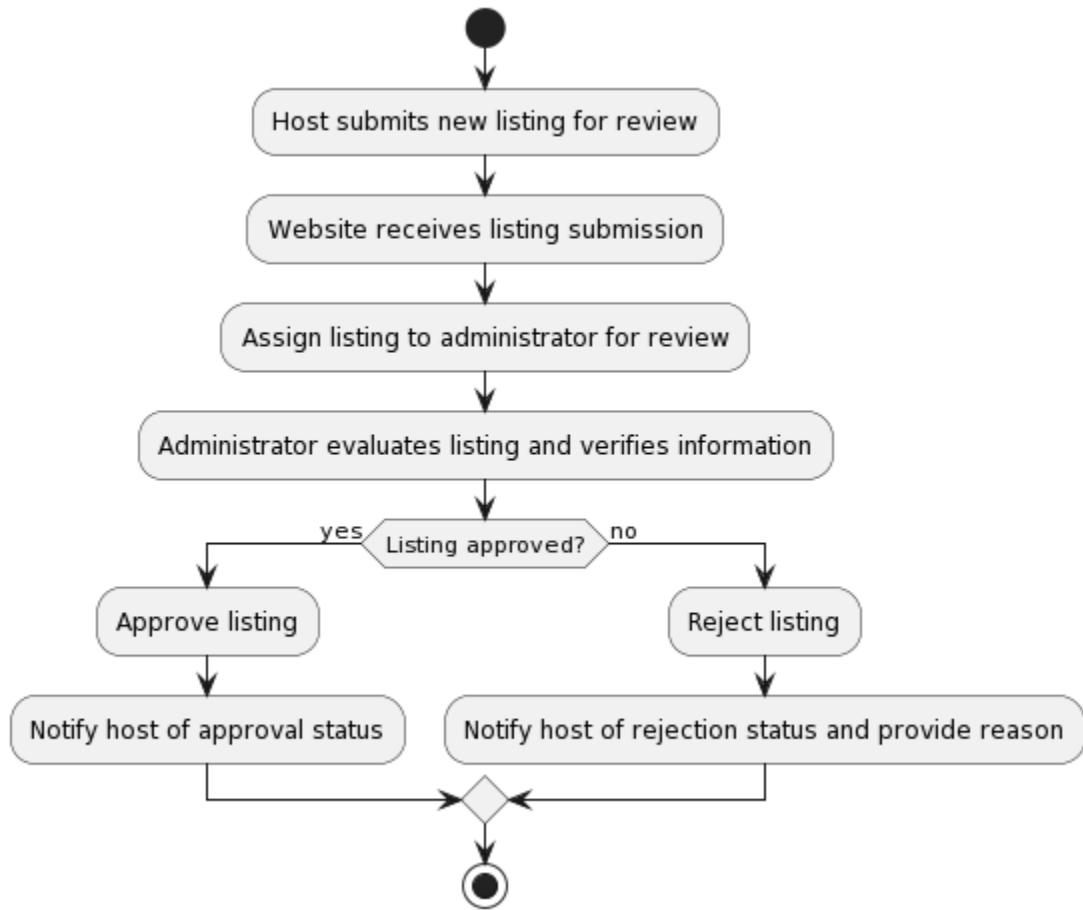
Ad_19-Create listing



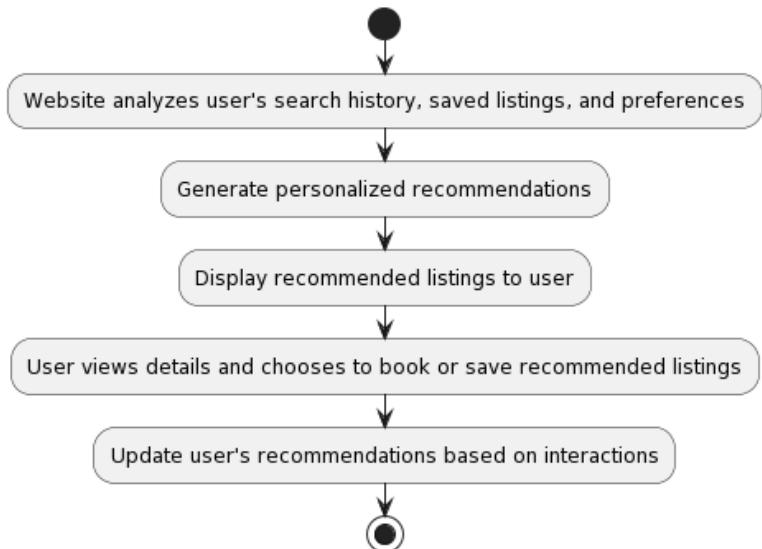
Ad_20-Verification process



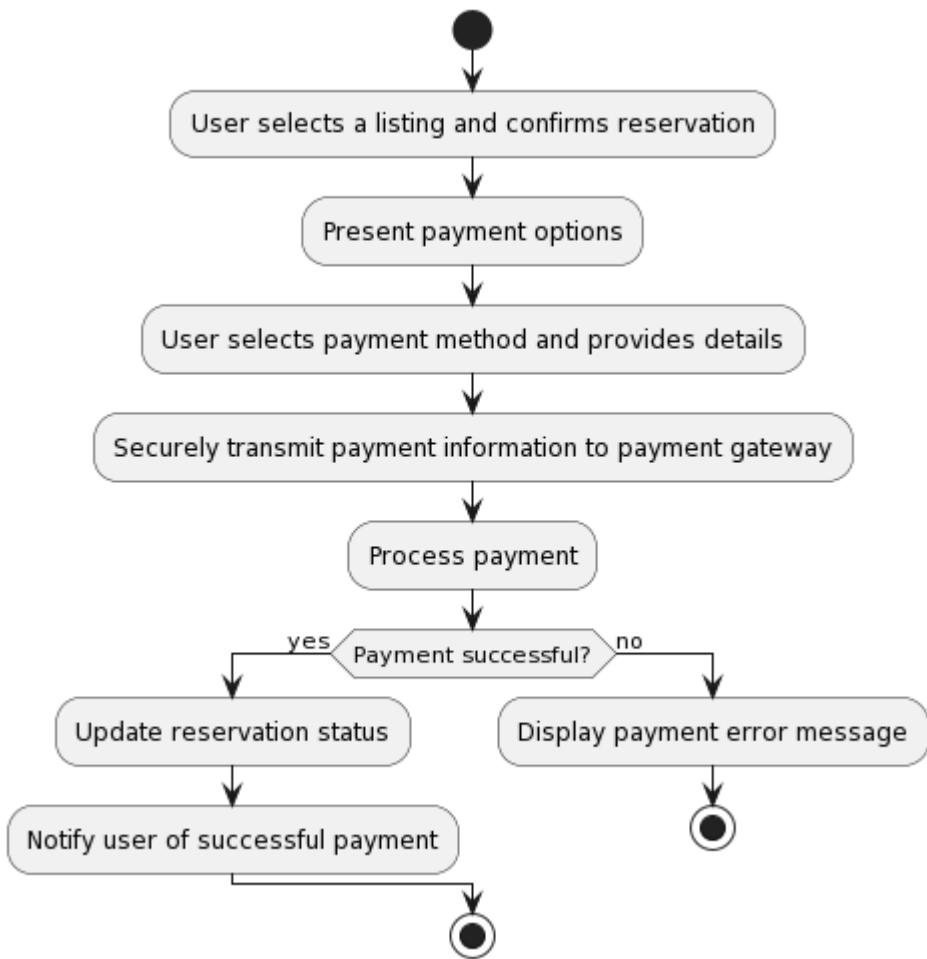
Ad_21-Listing approval process



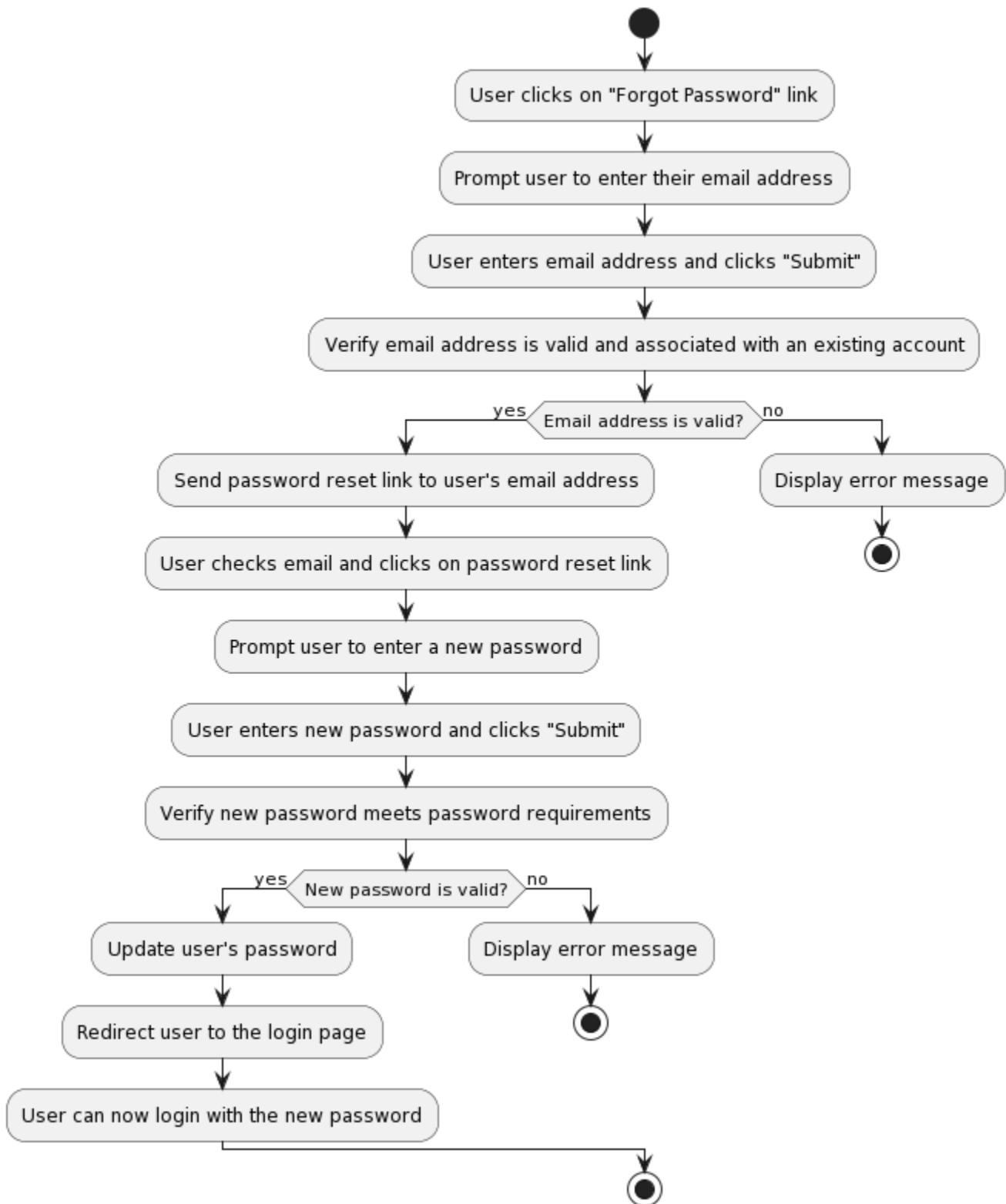
Ad_22-Listing recommendation



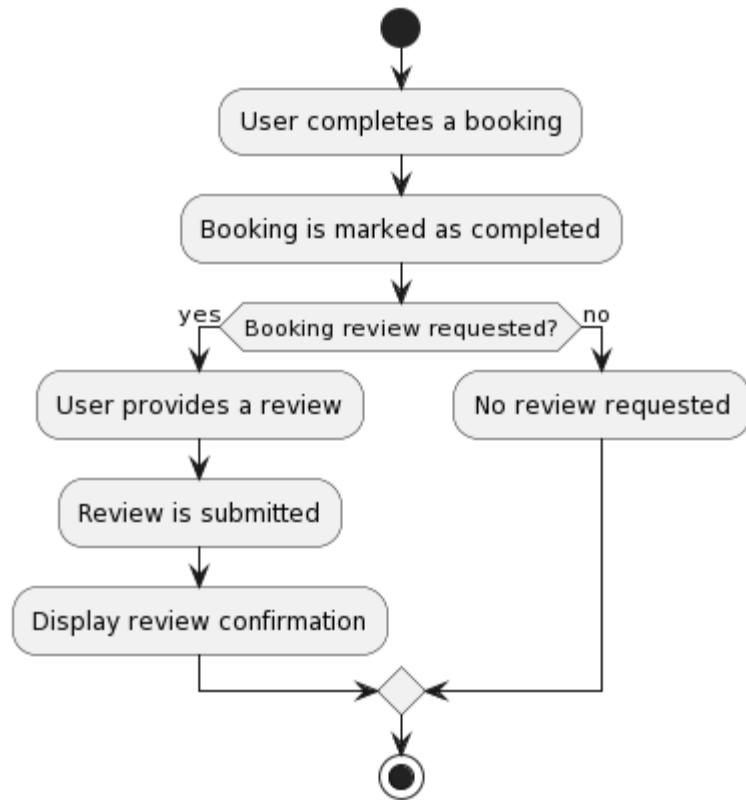
Ad_23-Payment processing



Ad_24-Recover Password

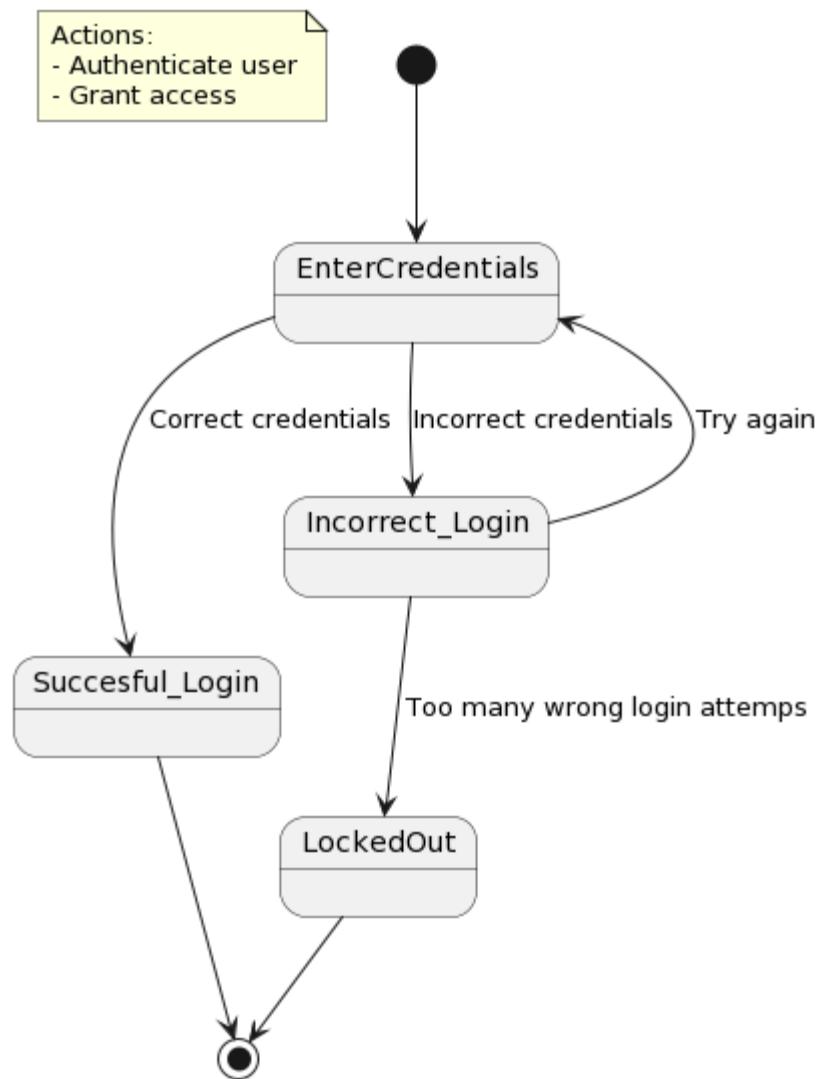


Ad_25-Review

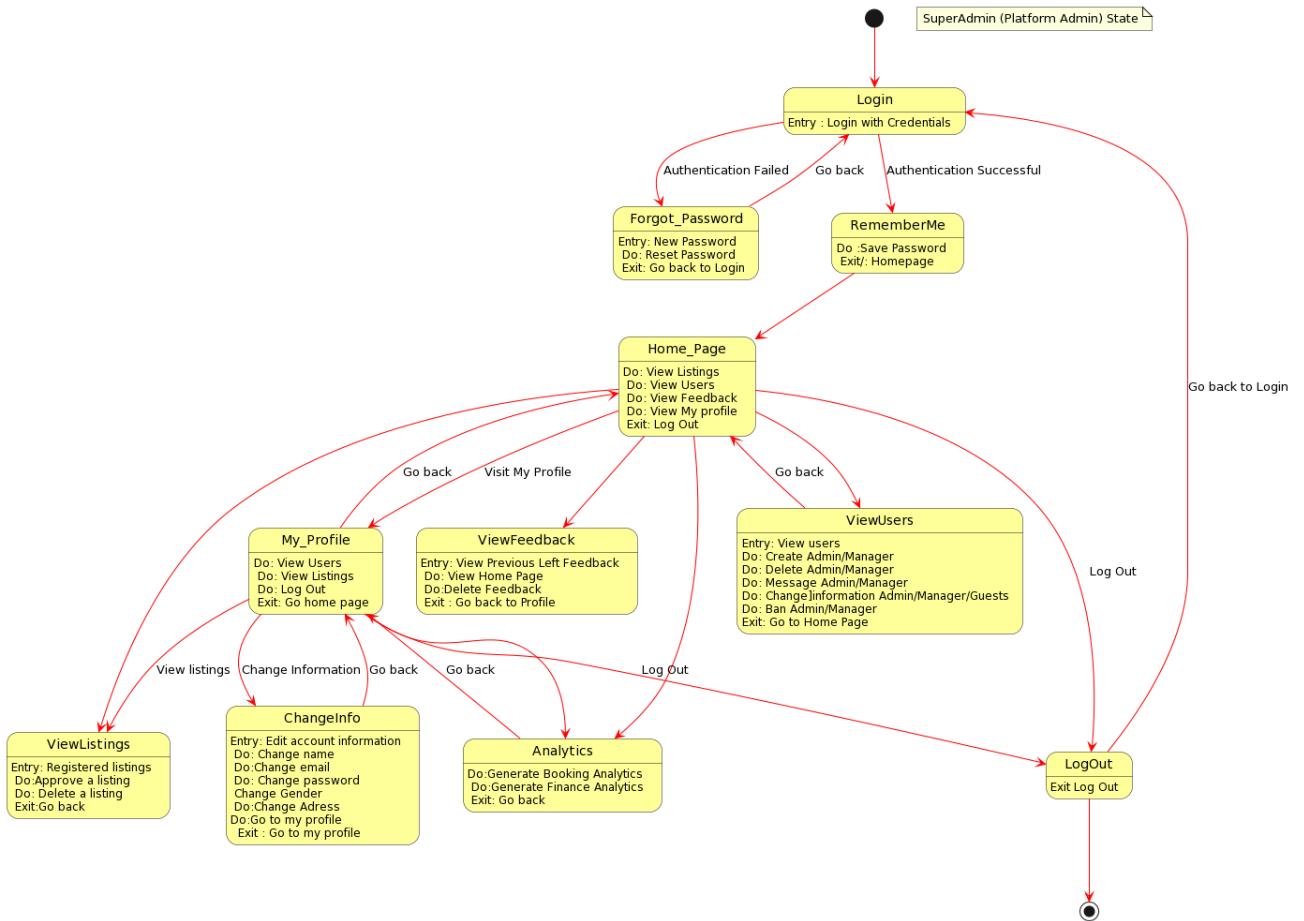


4.2.3 State Diagrams

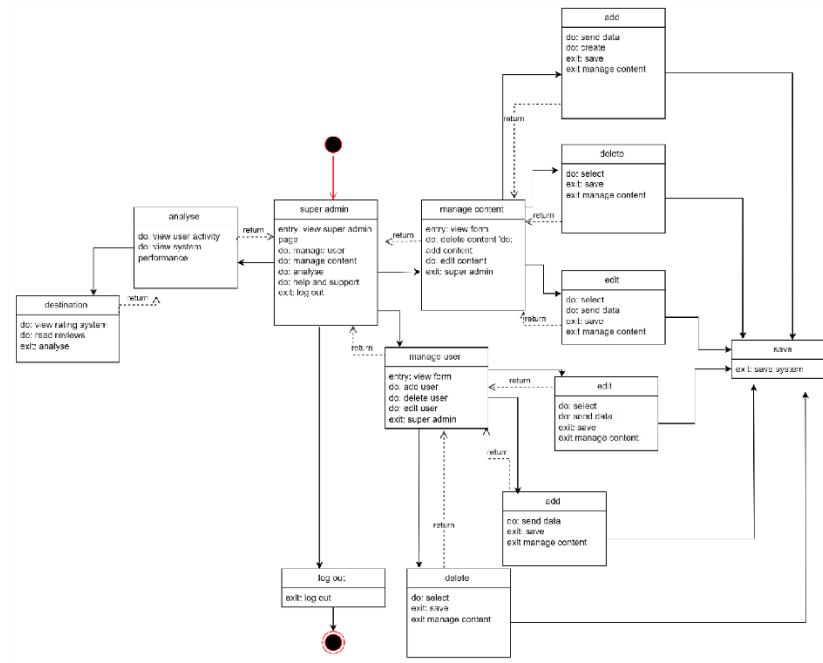
1. User Authentication State



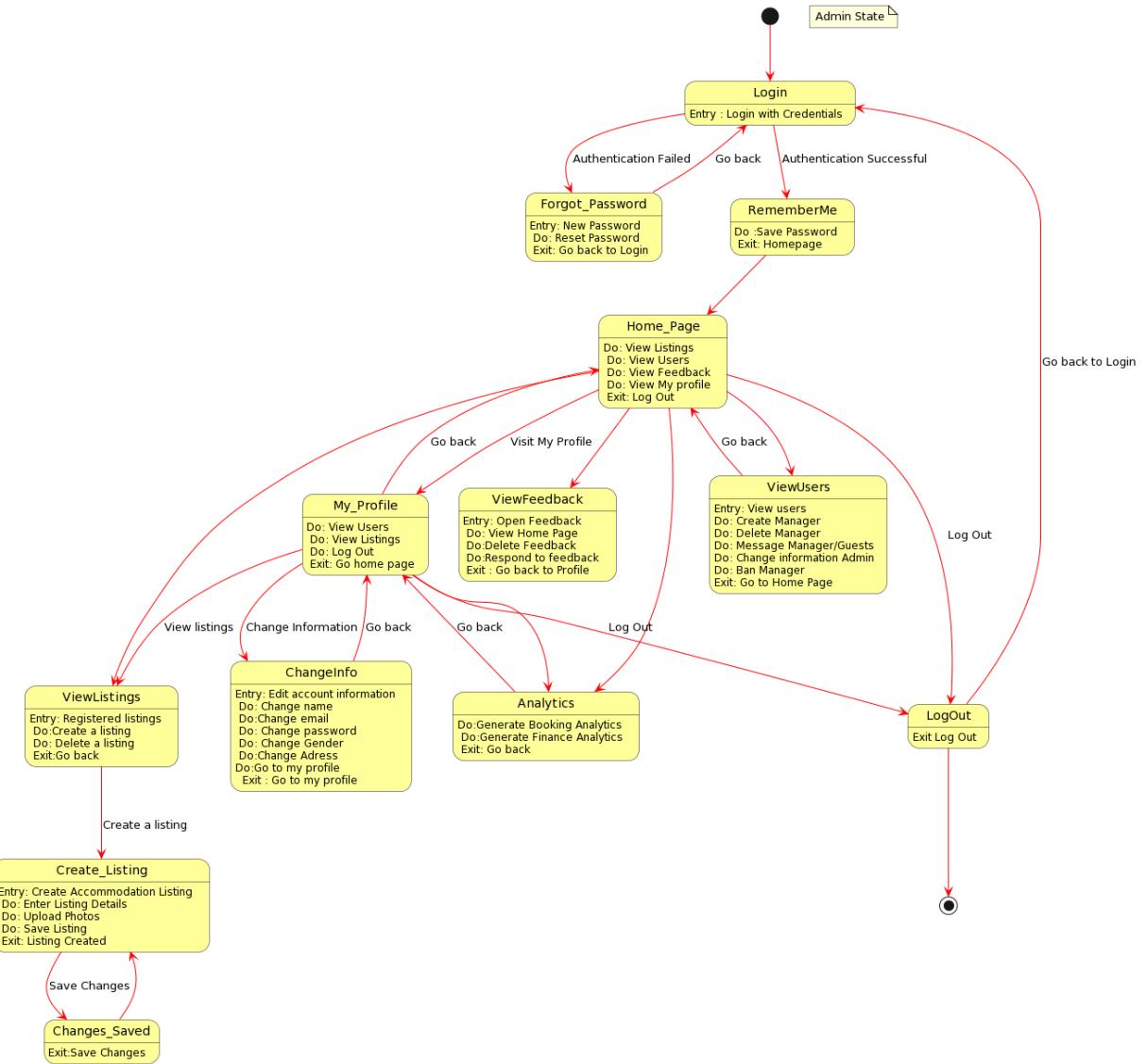
2.Super Admin State



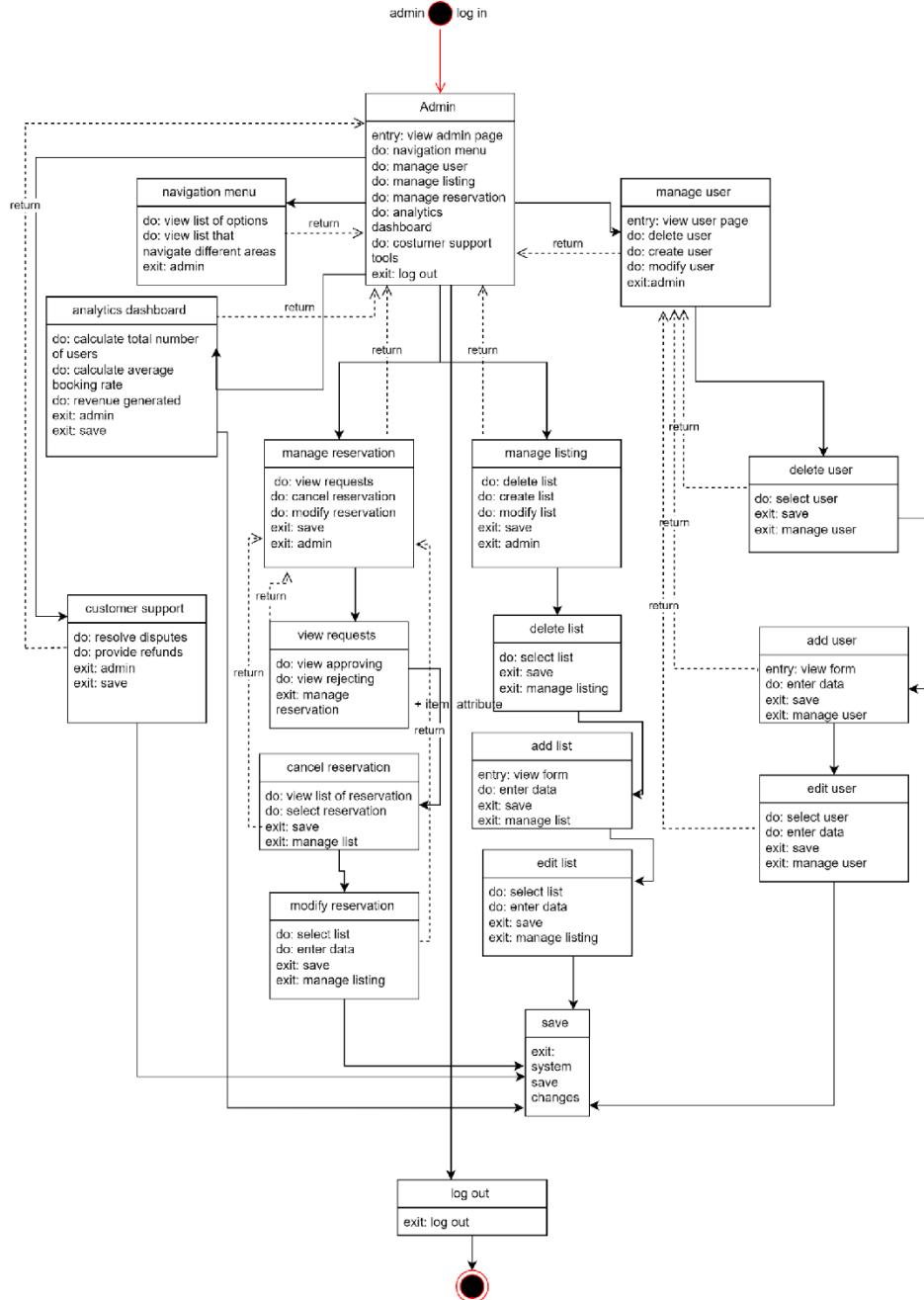
2.1 Super Admin State



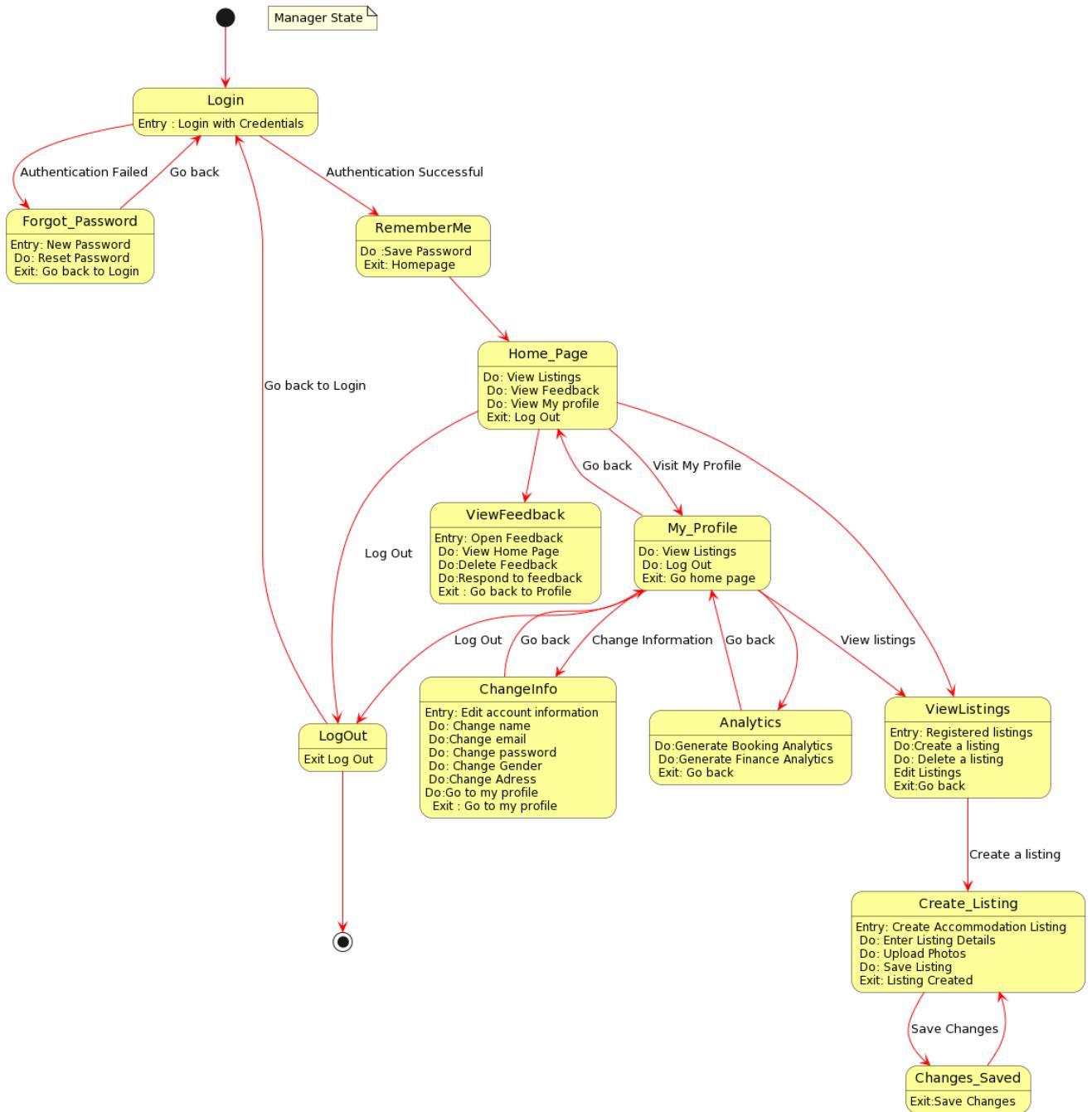
3.Admin state



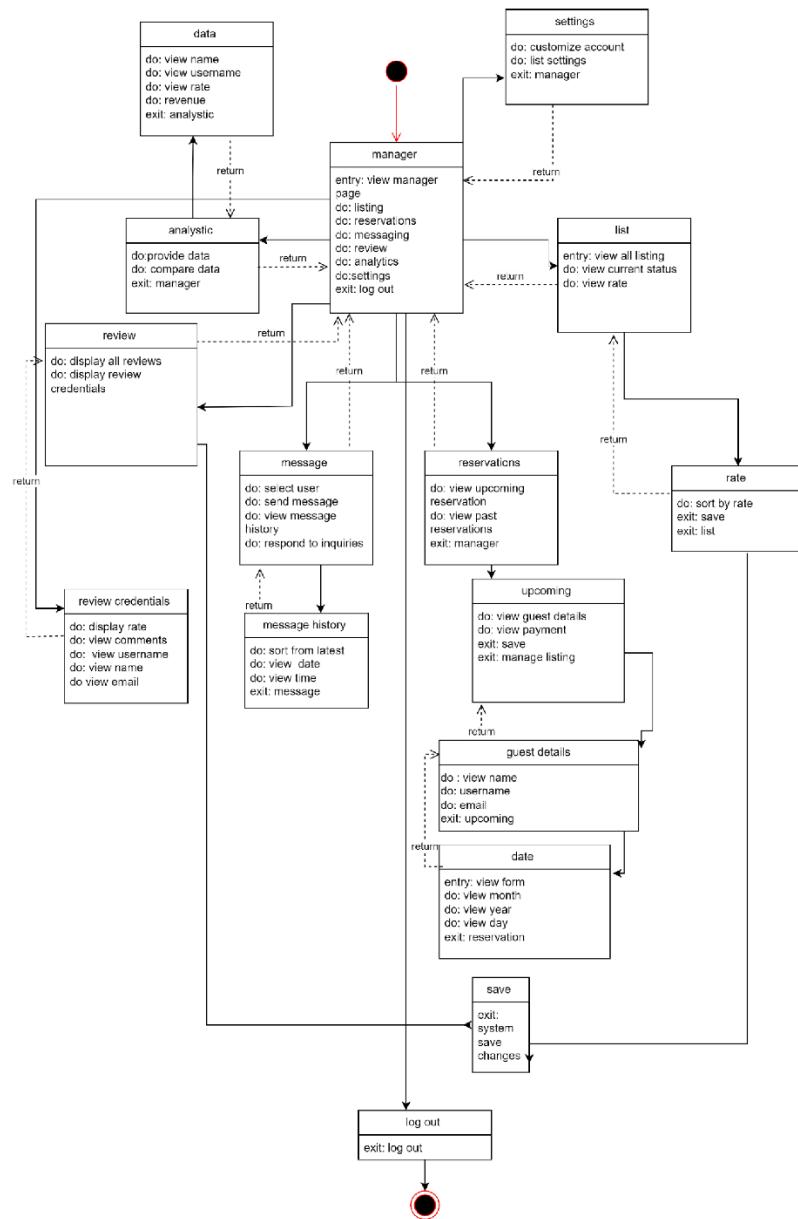
3.1 Admin State



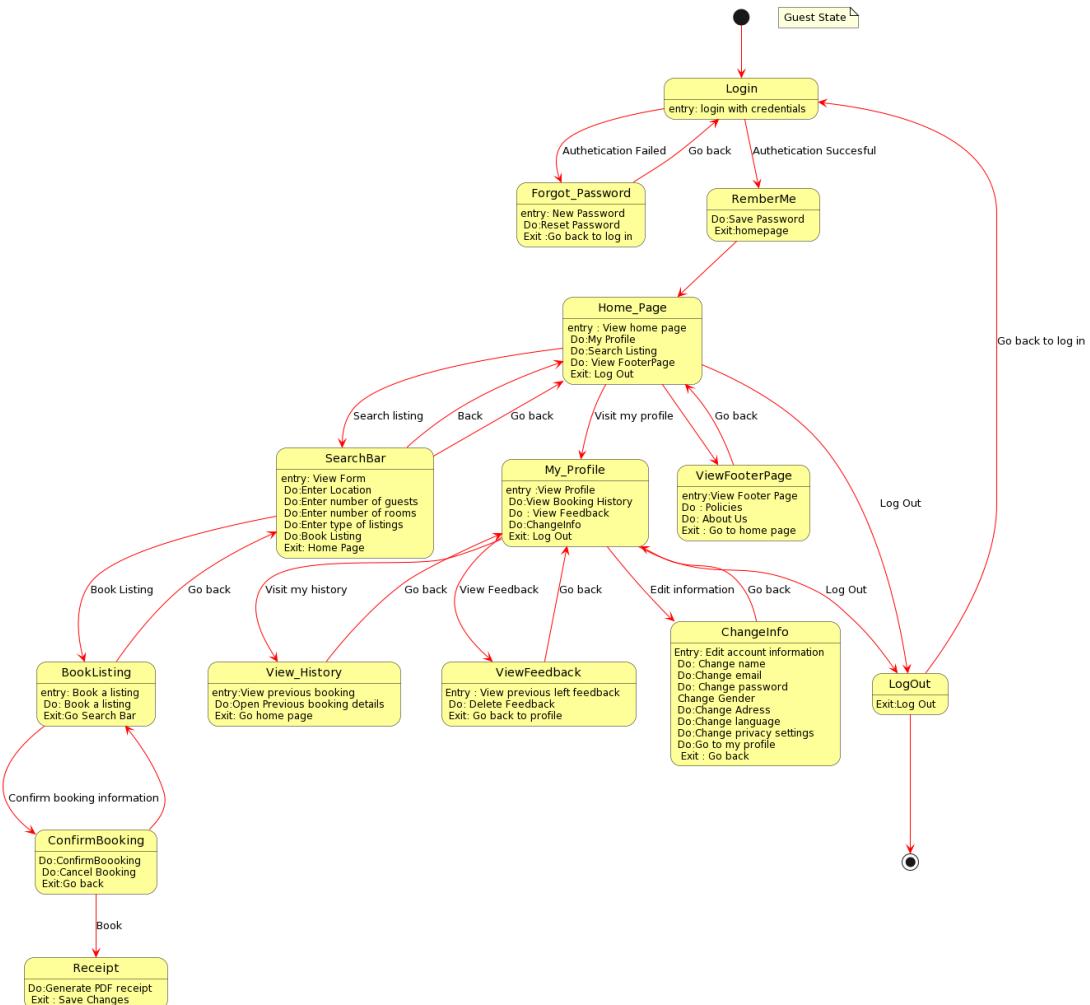
4. Manager State



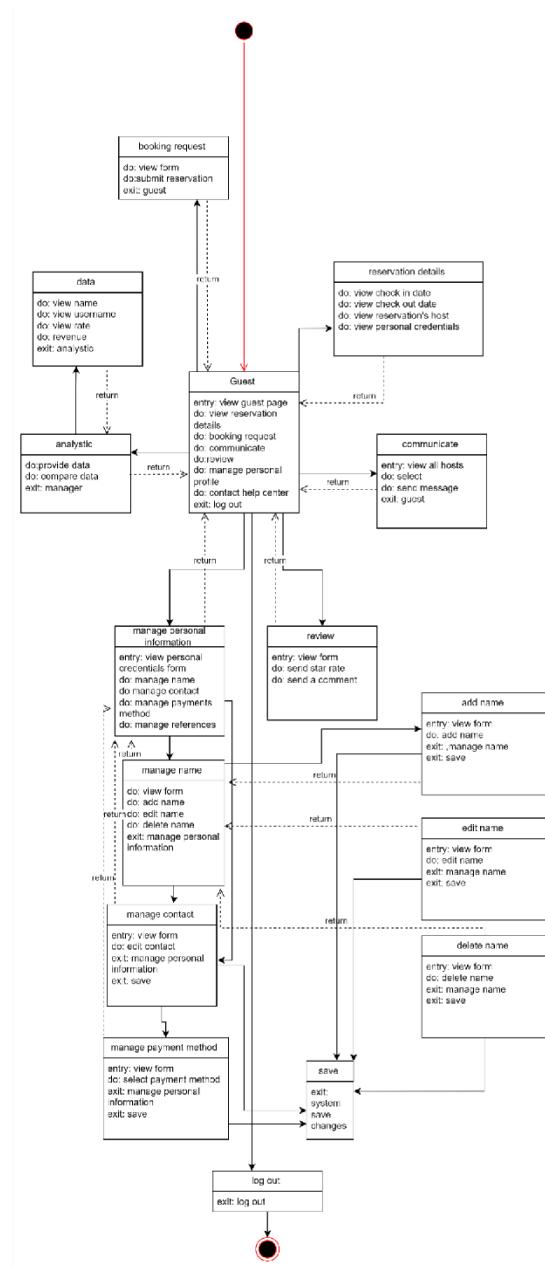
4.1 Manager State



5. Guest State

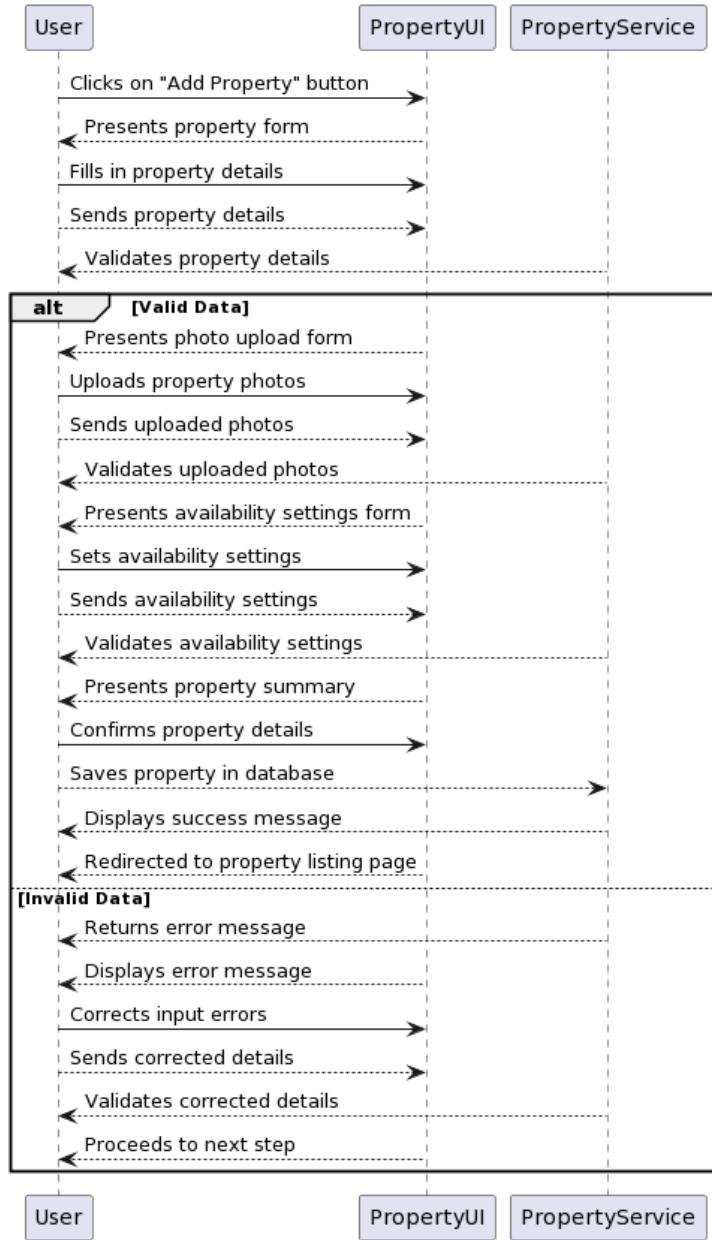


5.1 Guest state

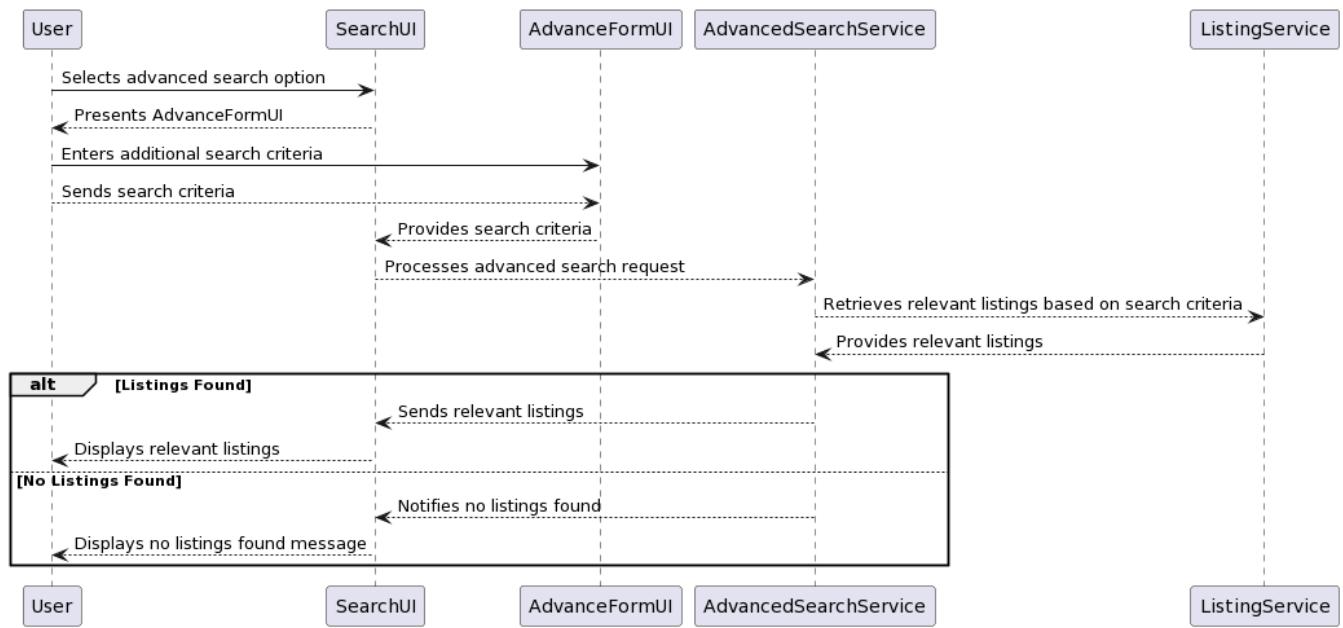


4.2.4 Sequence Diagrams

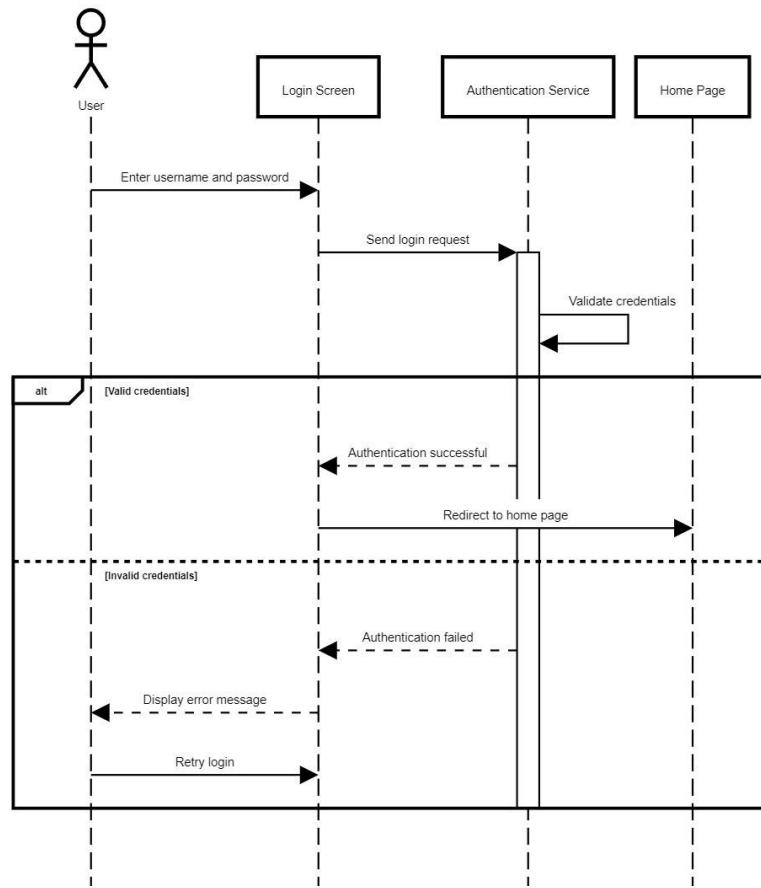
SeD_01-Add_Property

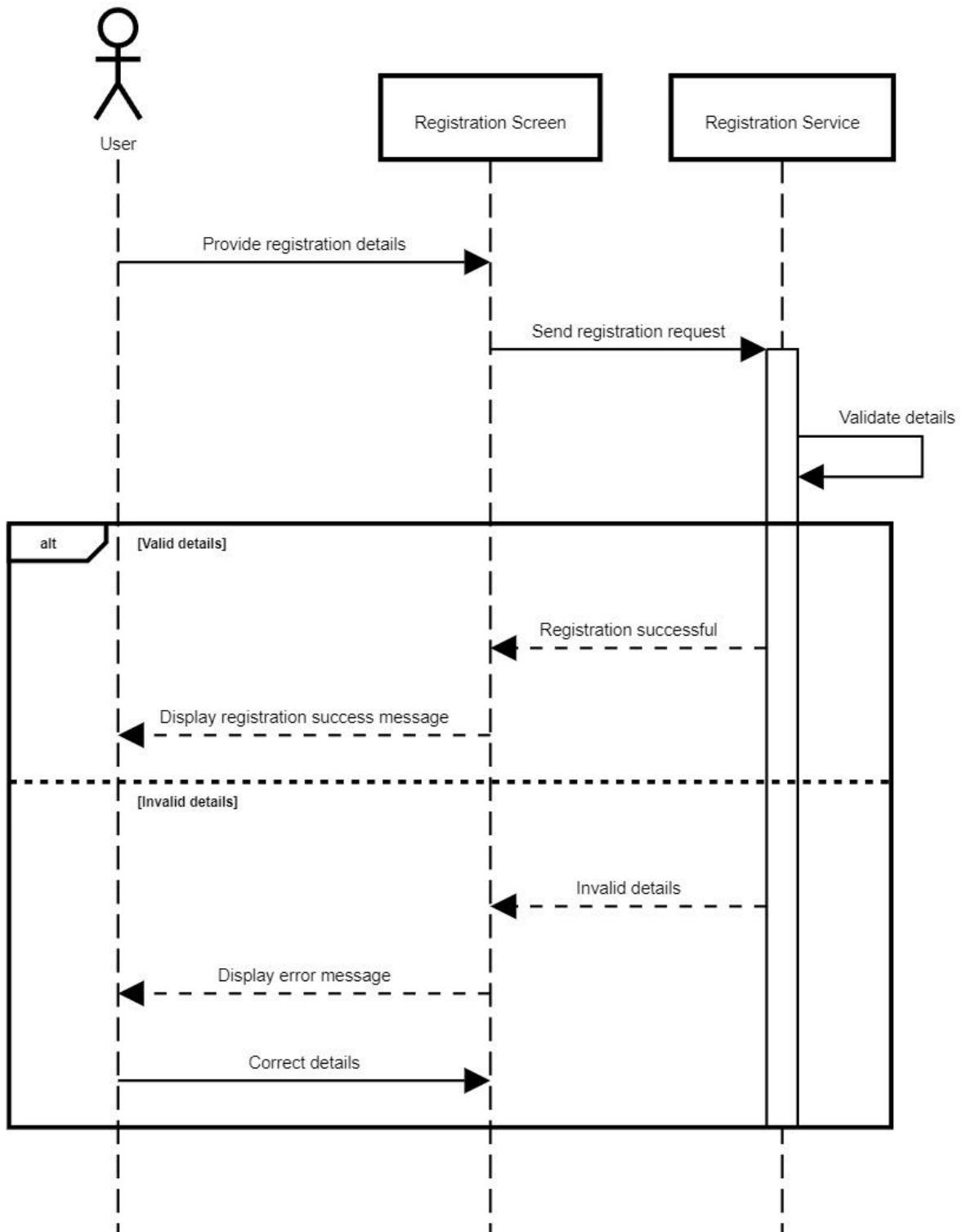


SeD_02-Advance_Search

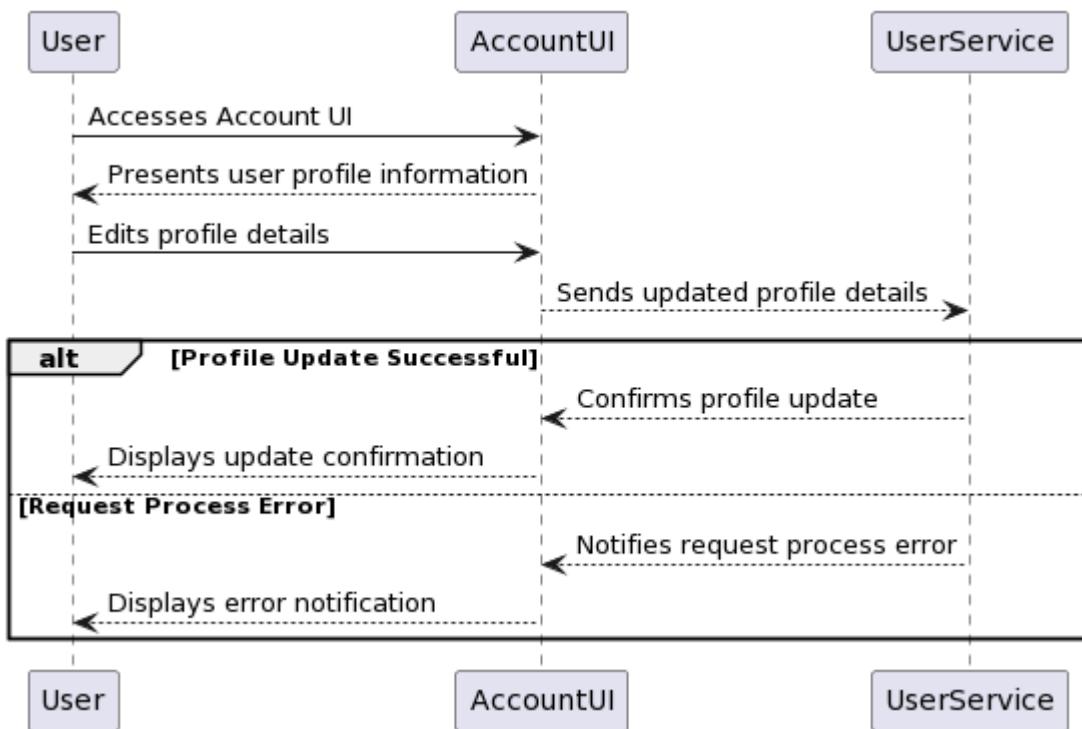


SeD_03-Login Sequence

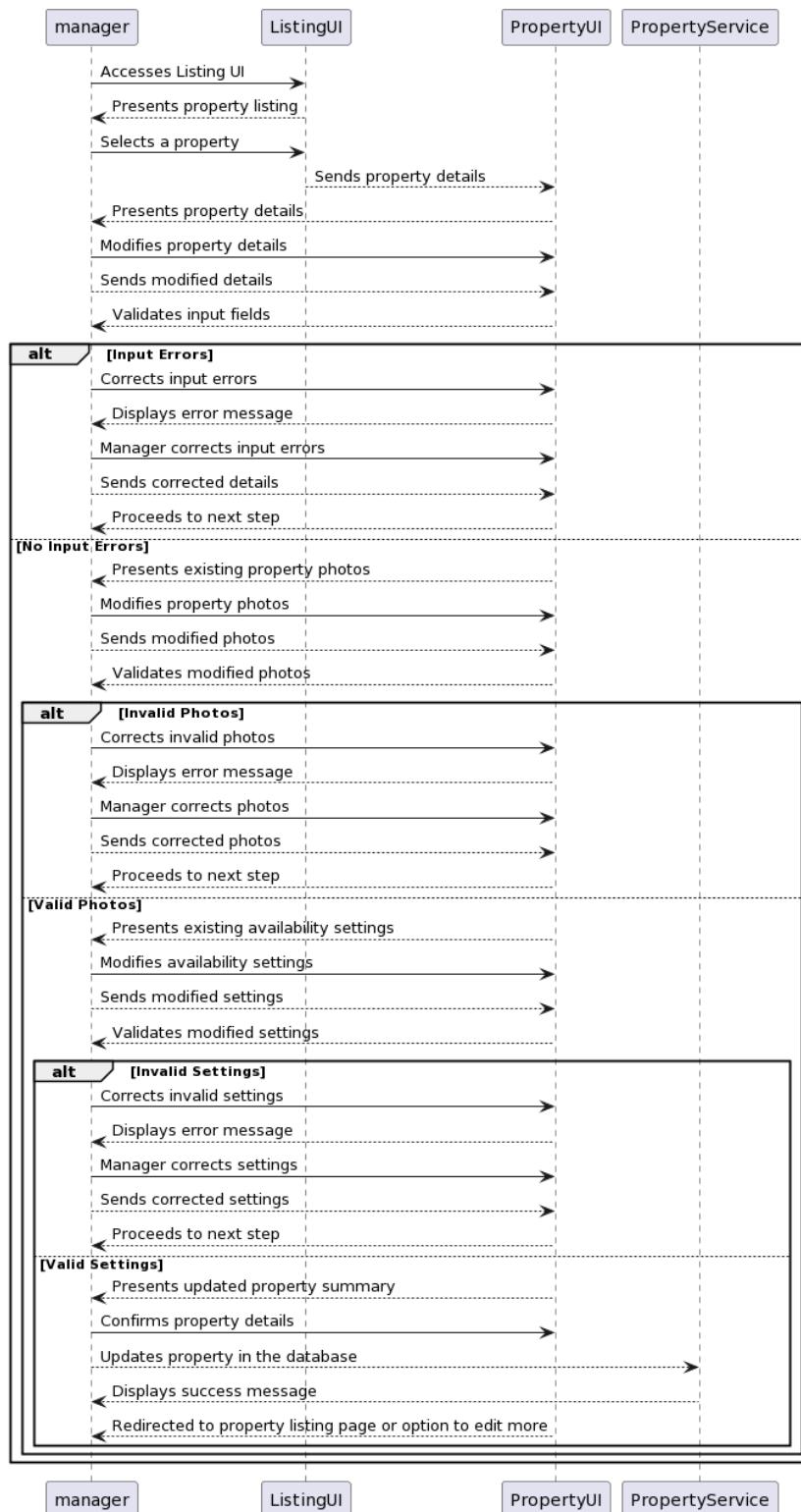


SeD_04-Registration

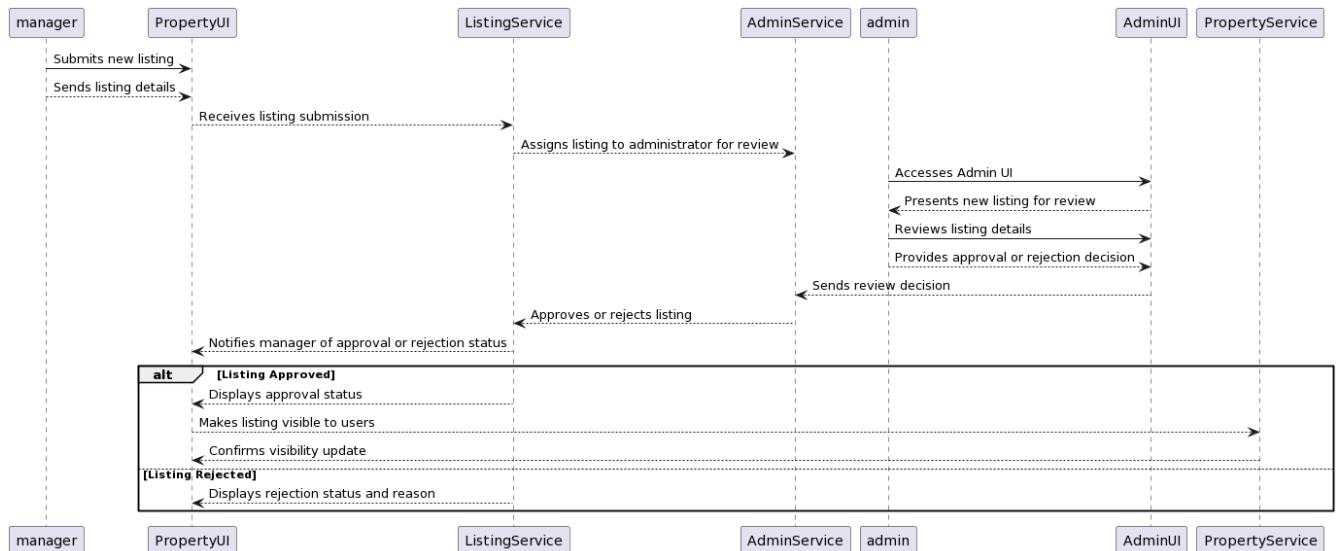
SeD_05-Edit Profile



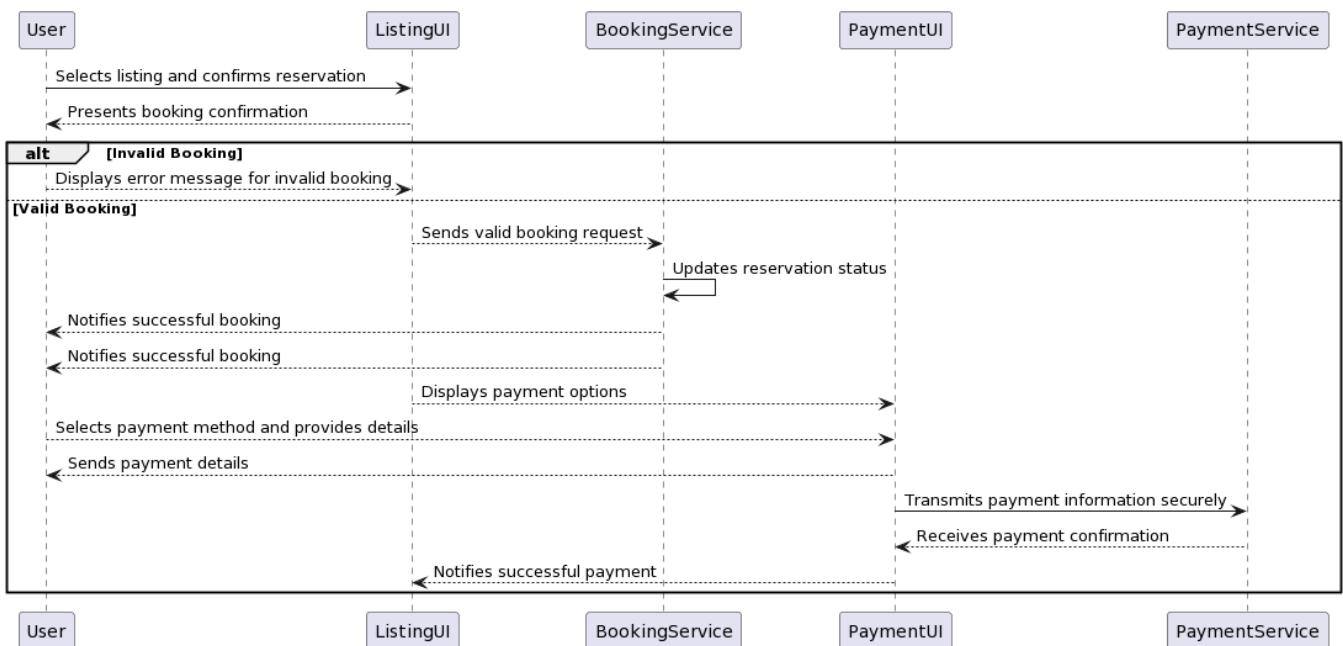
SeD_06-Edit Property



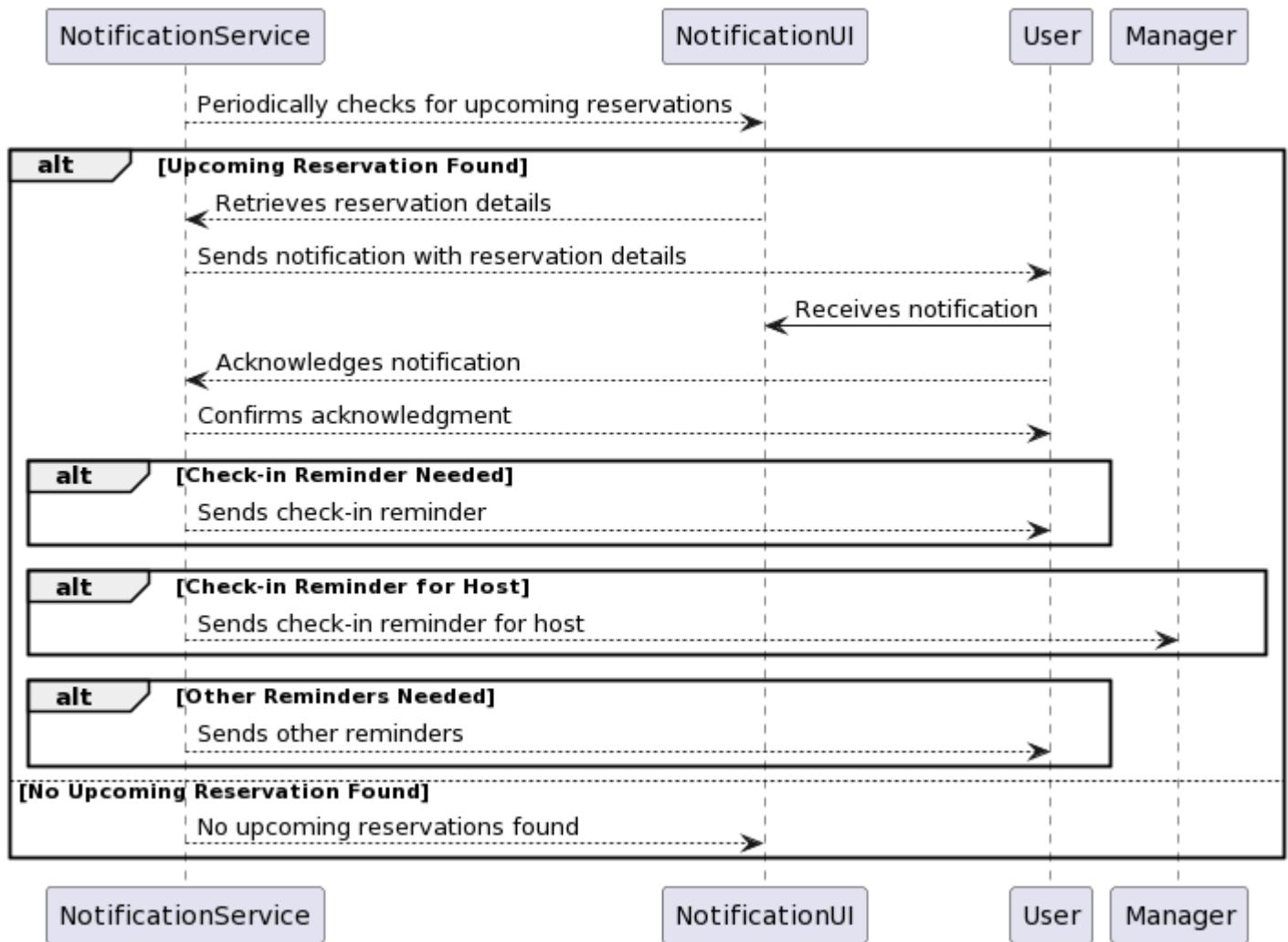
SeD_07-Listing Approval



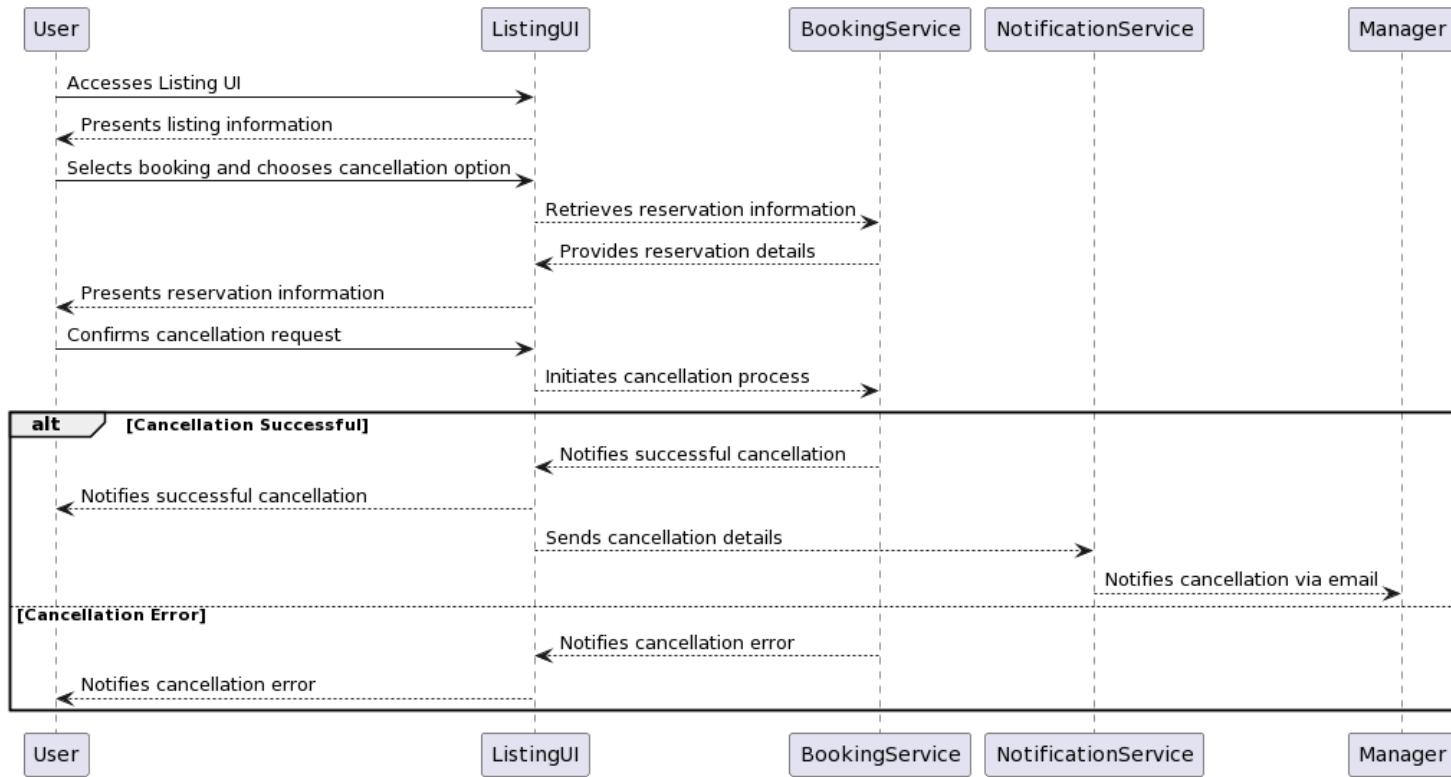
SeD_08-Payment Process



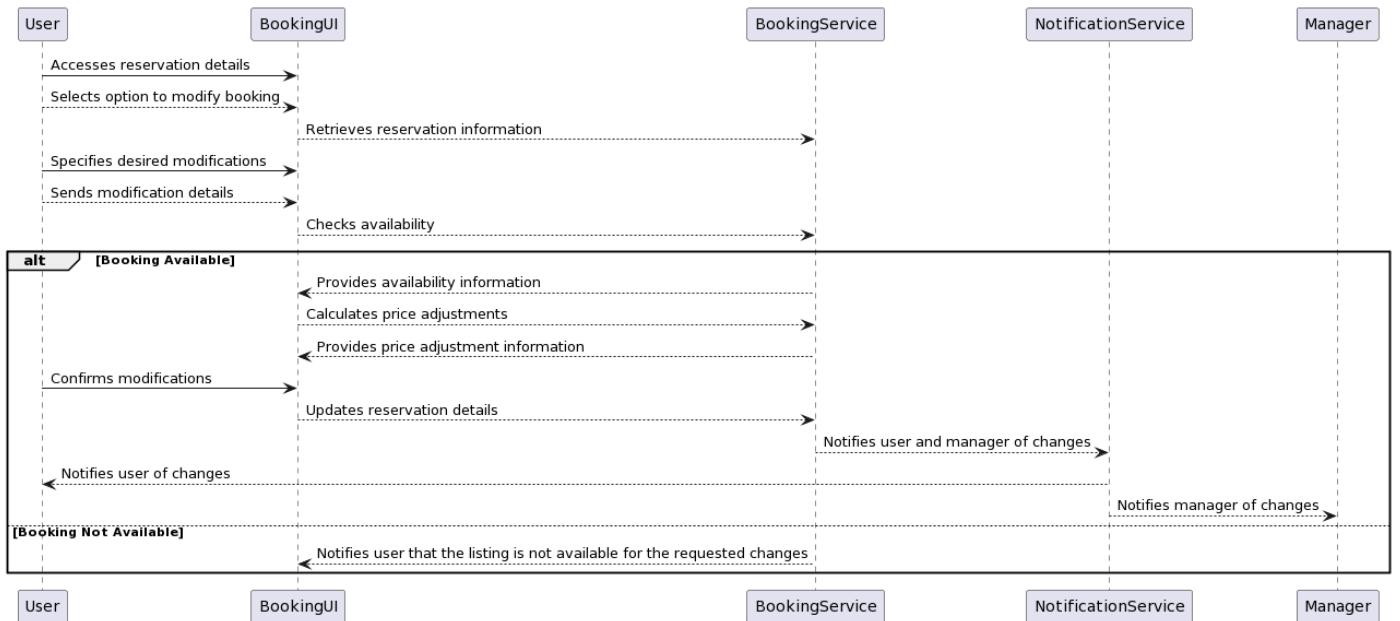
SeD_09-Notification Reminder

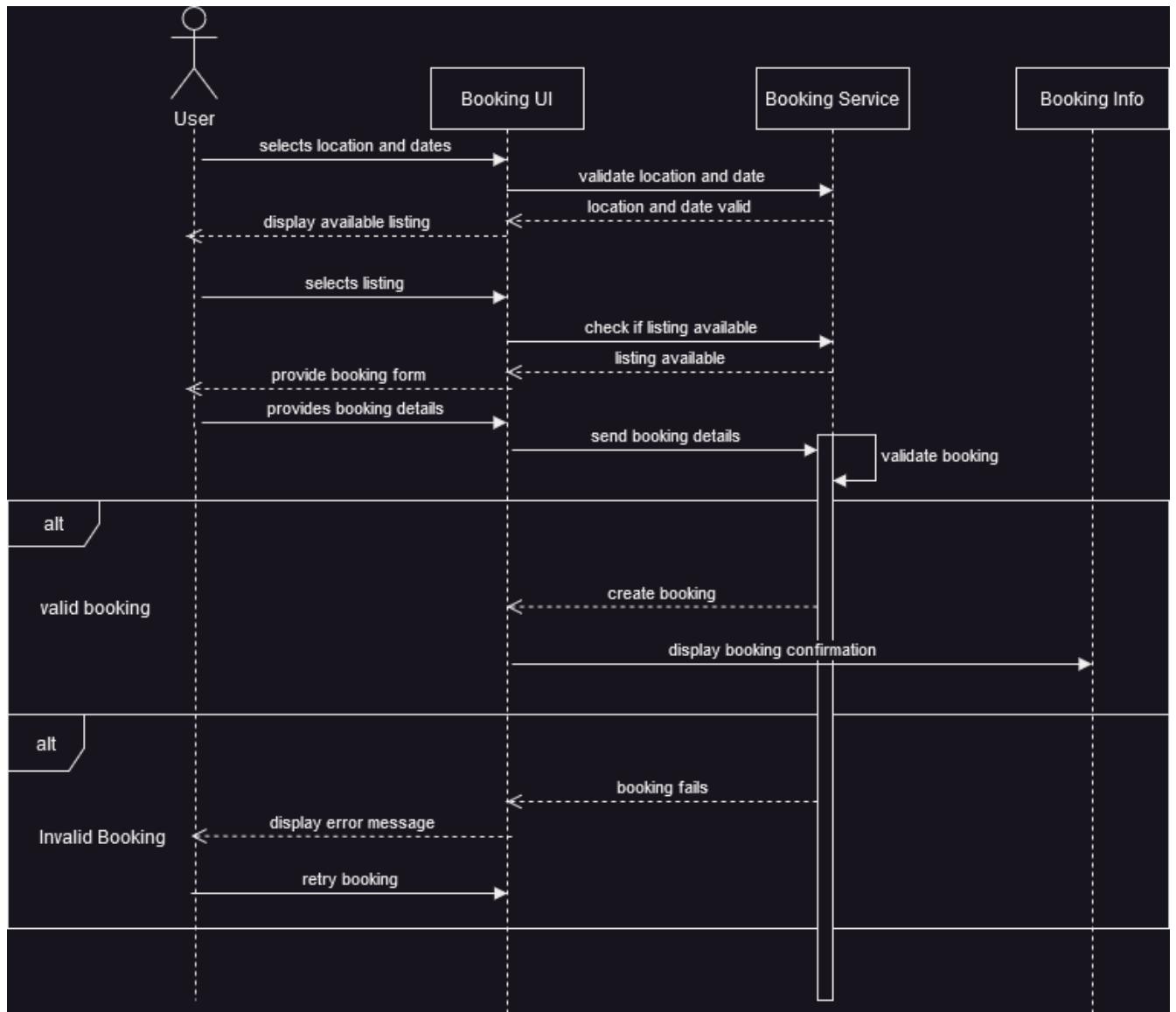


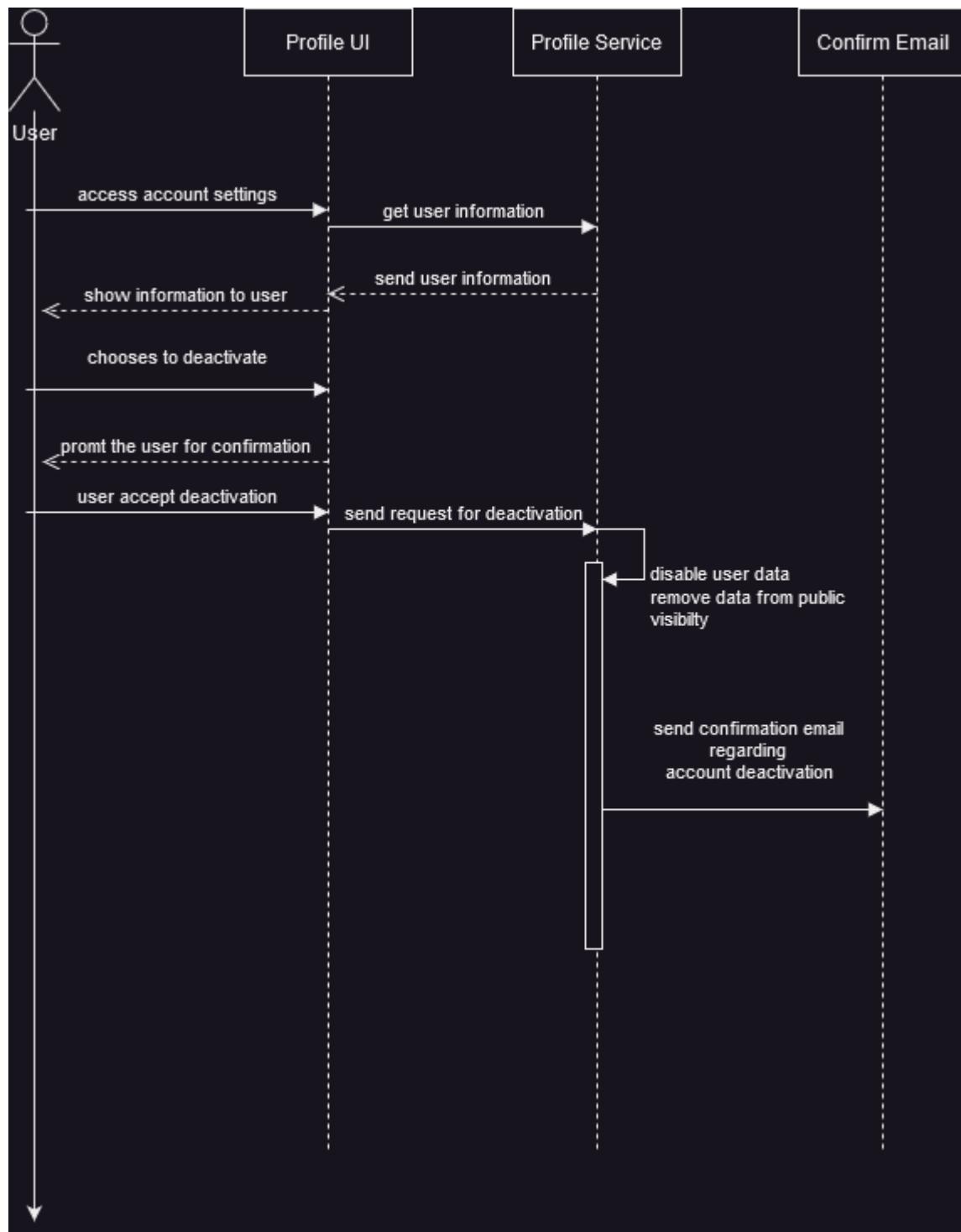
SeD_10-Booking Cancellation



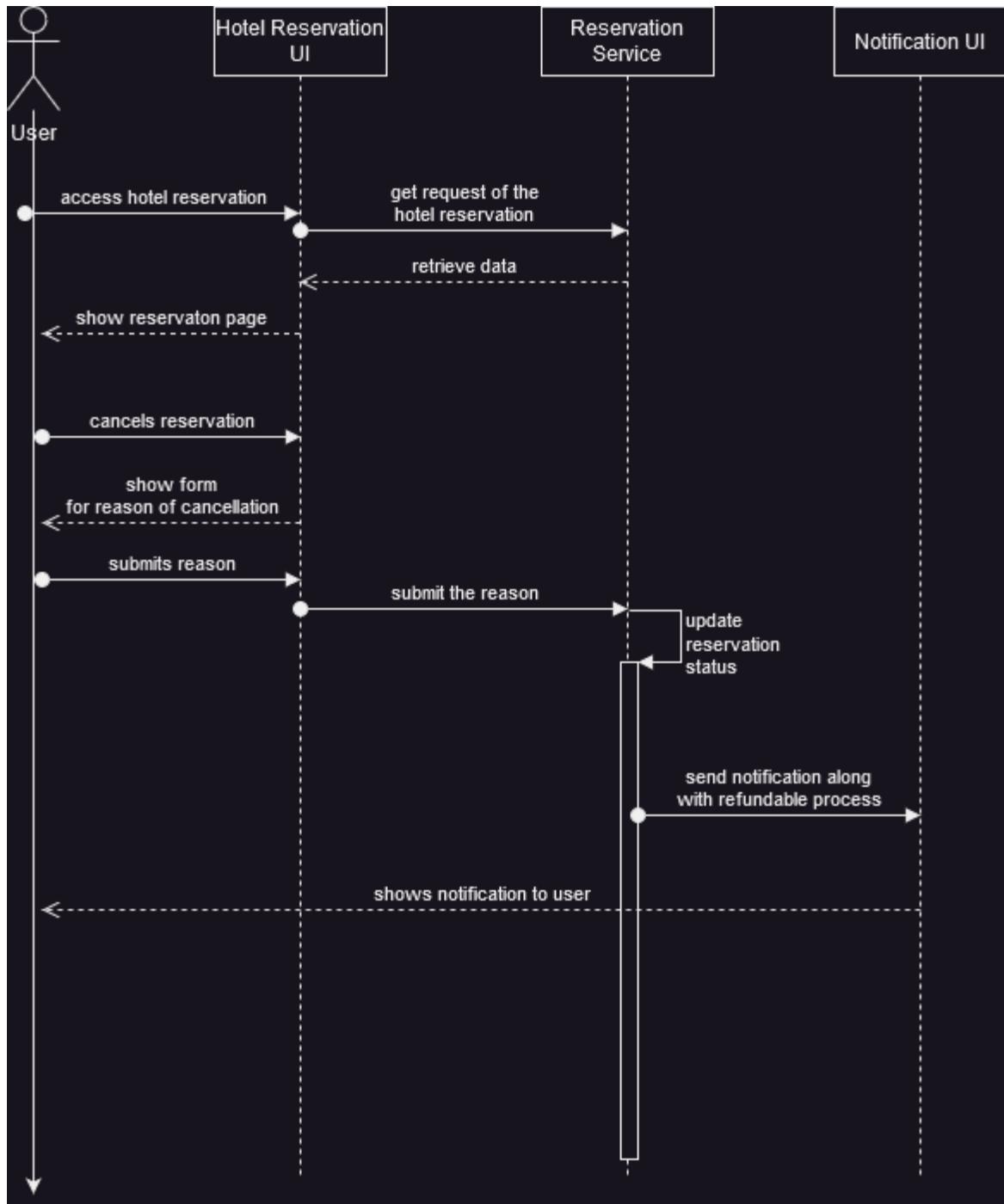
SeD_11-Booking Edit



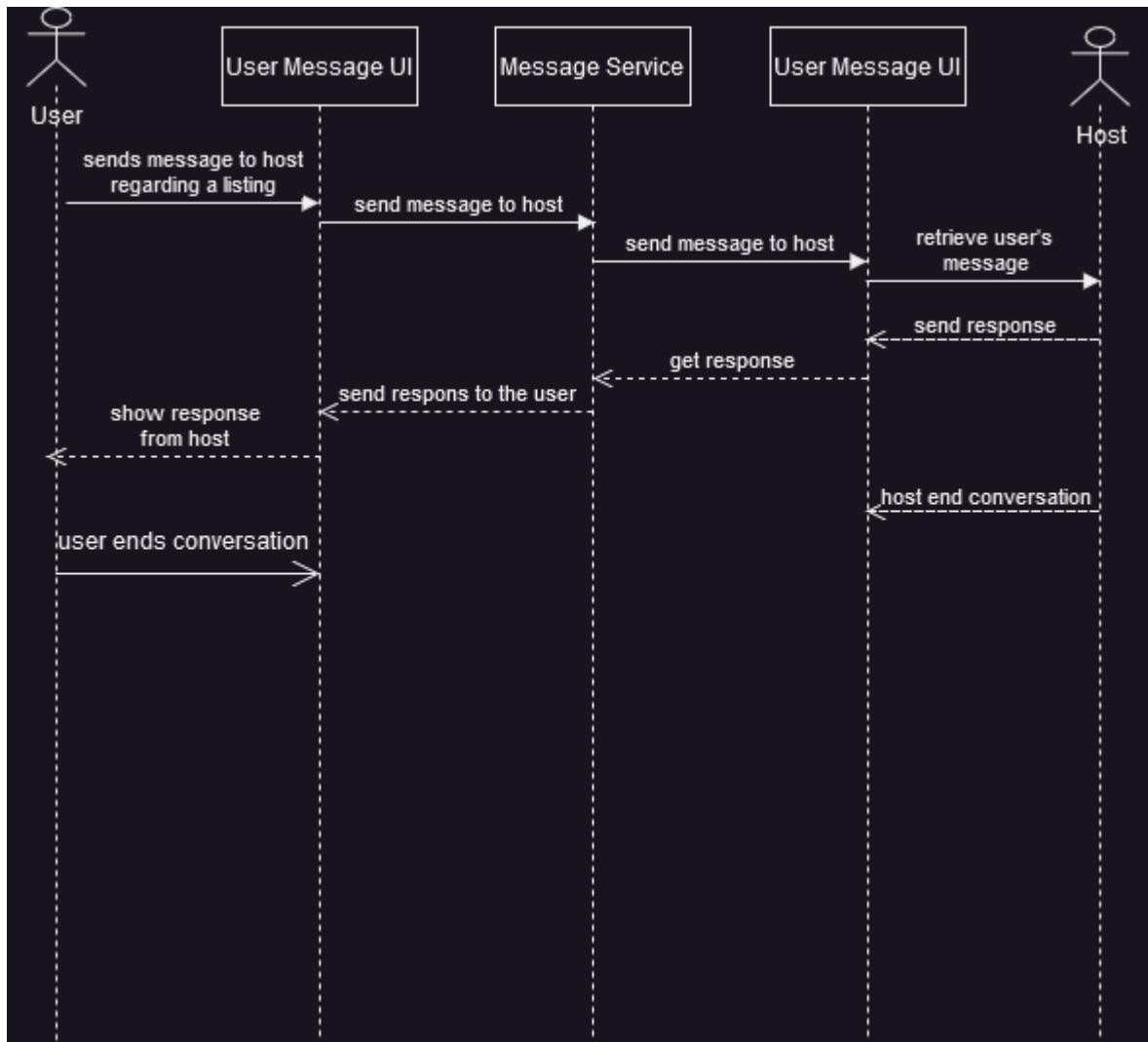
SeD_12-Booking

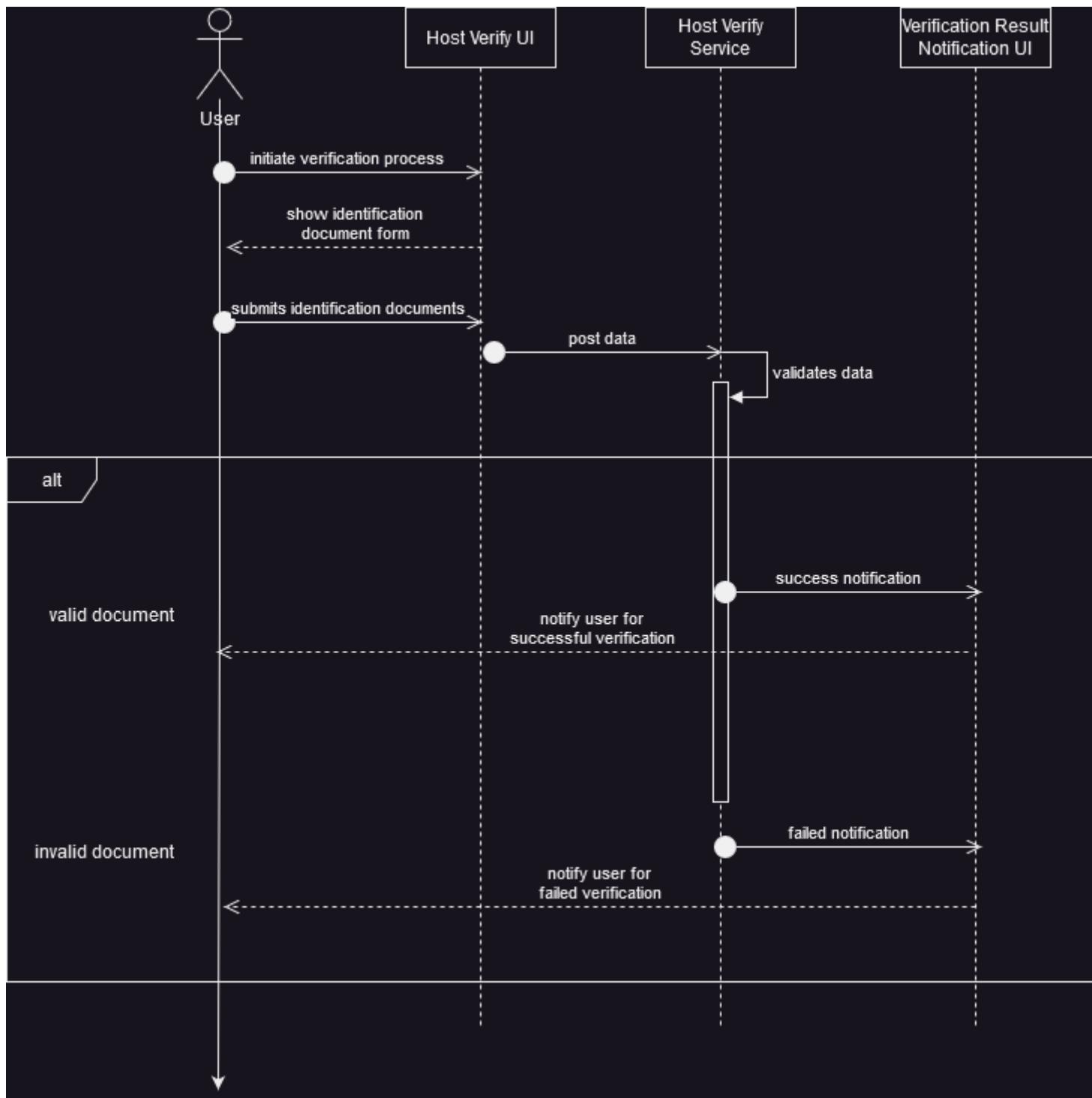
SeD_13-Deactivate account

SeD_14-Host Cancellation

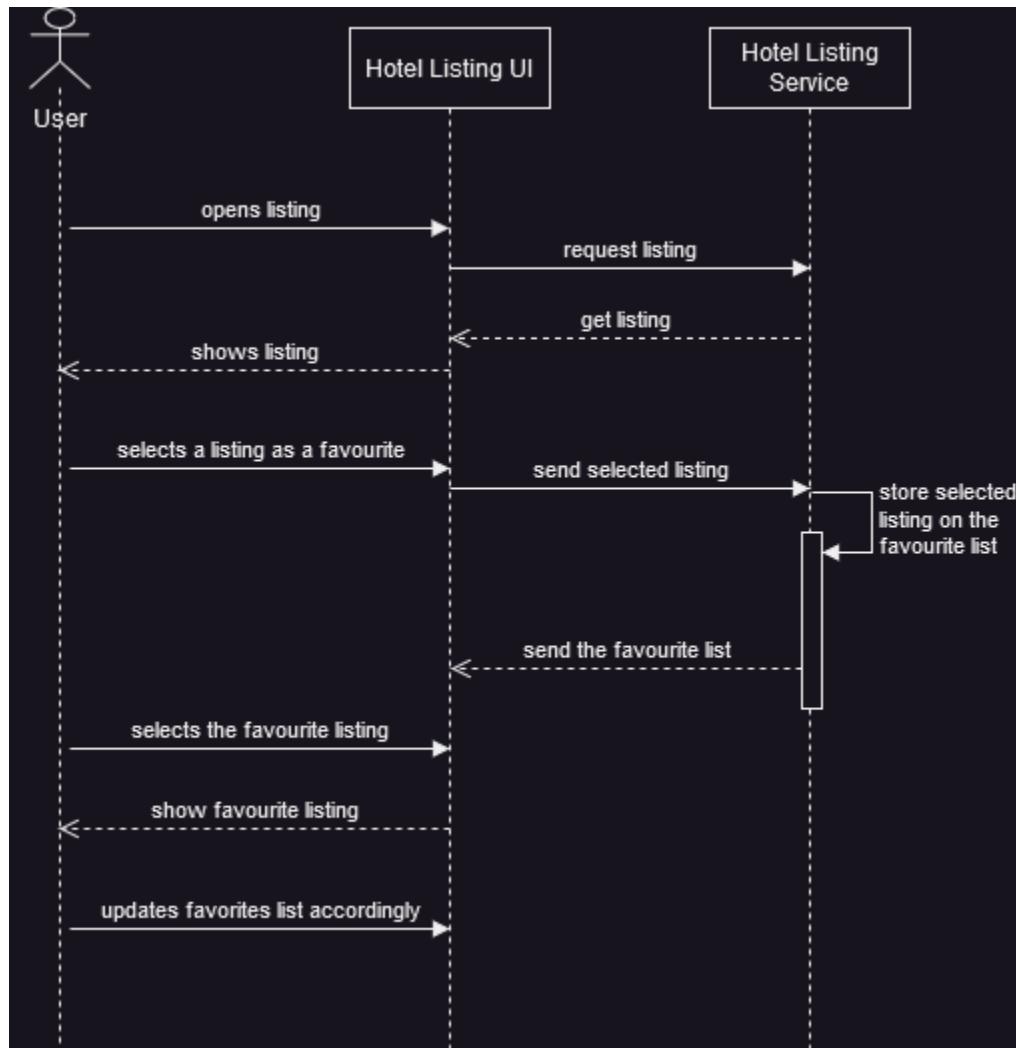


SeD_15-Host Communication

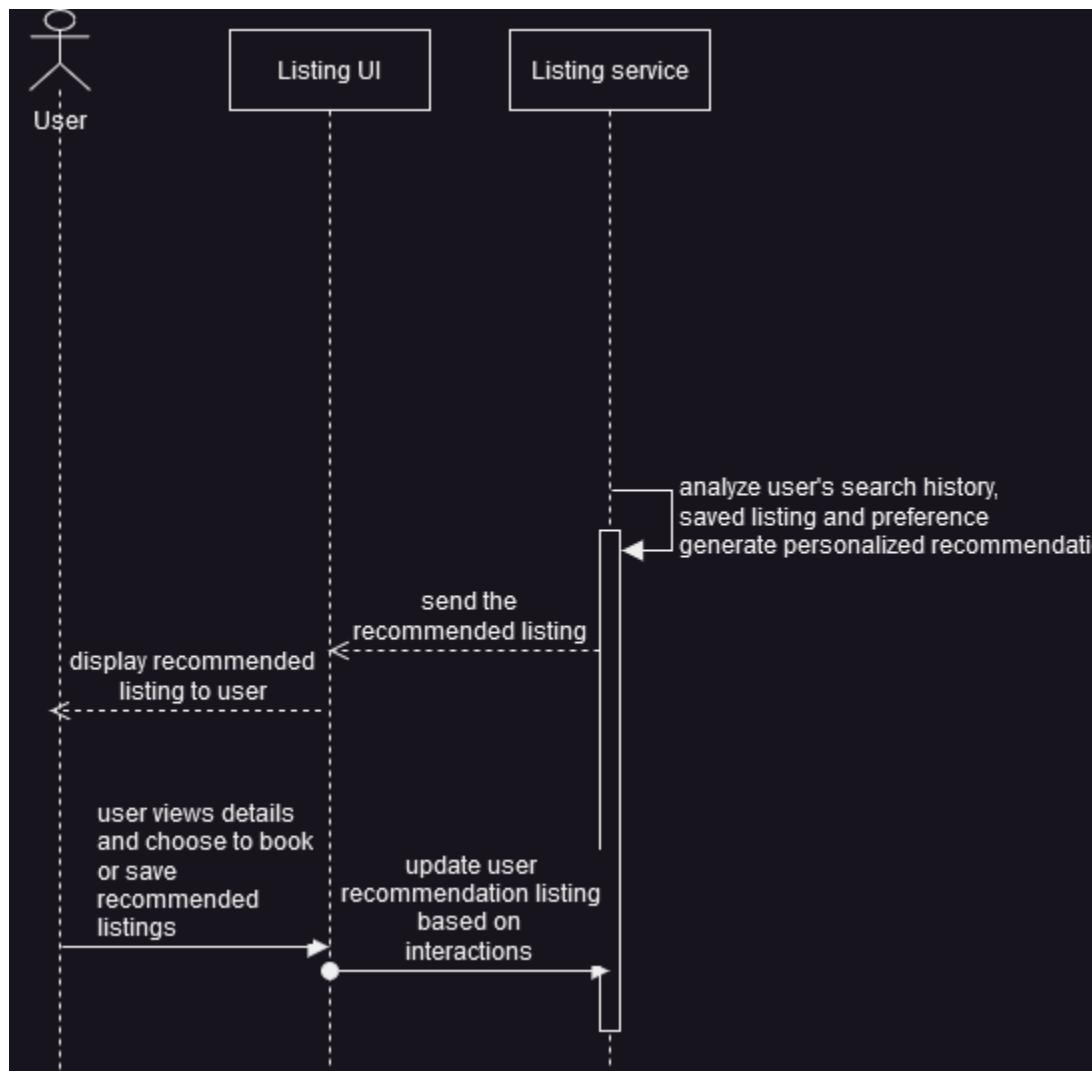


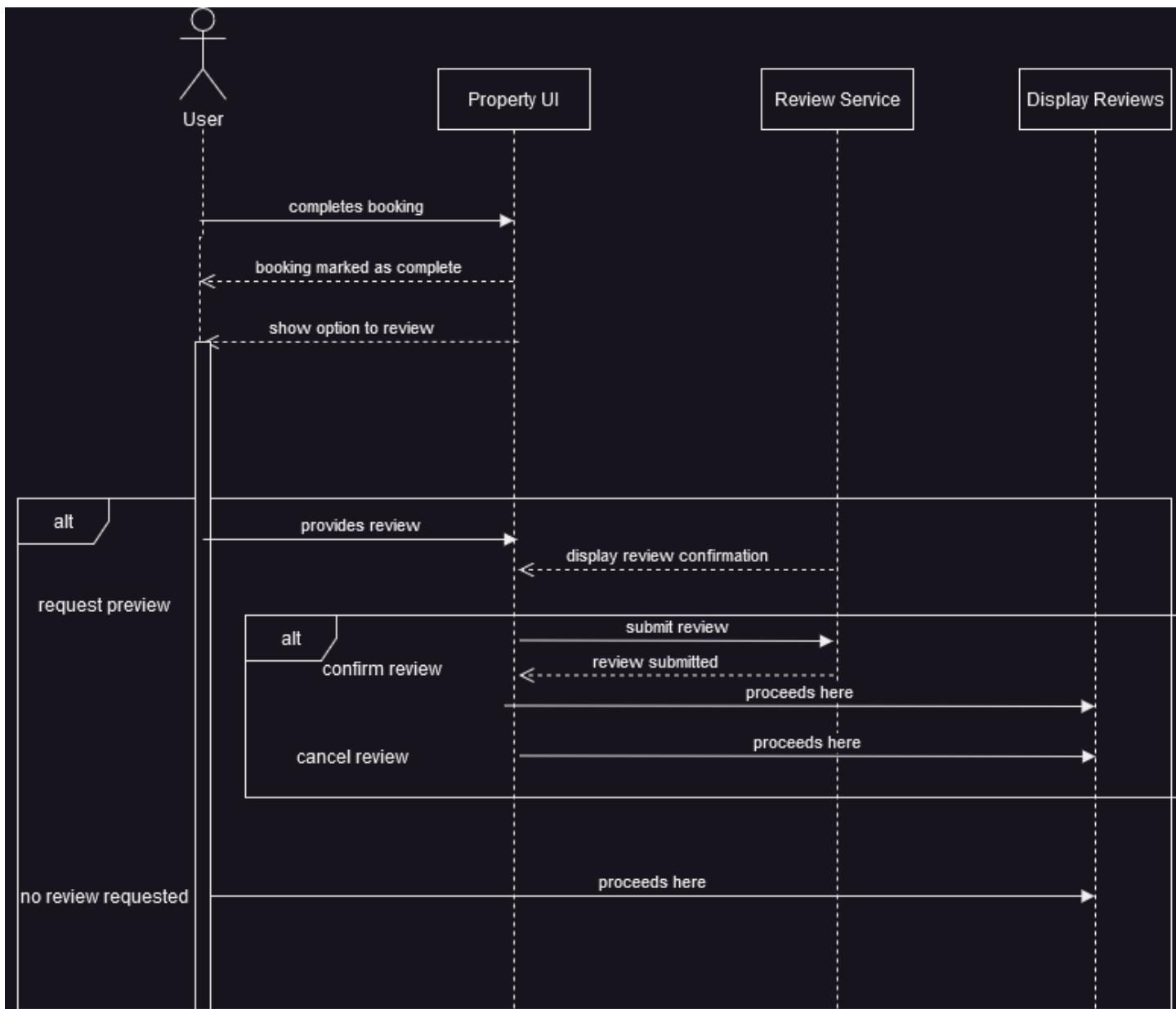
SeD_16-Host Verification

SeD_17-Favourites Management

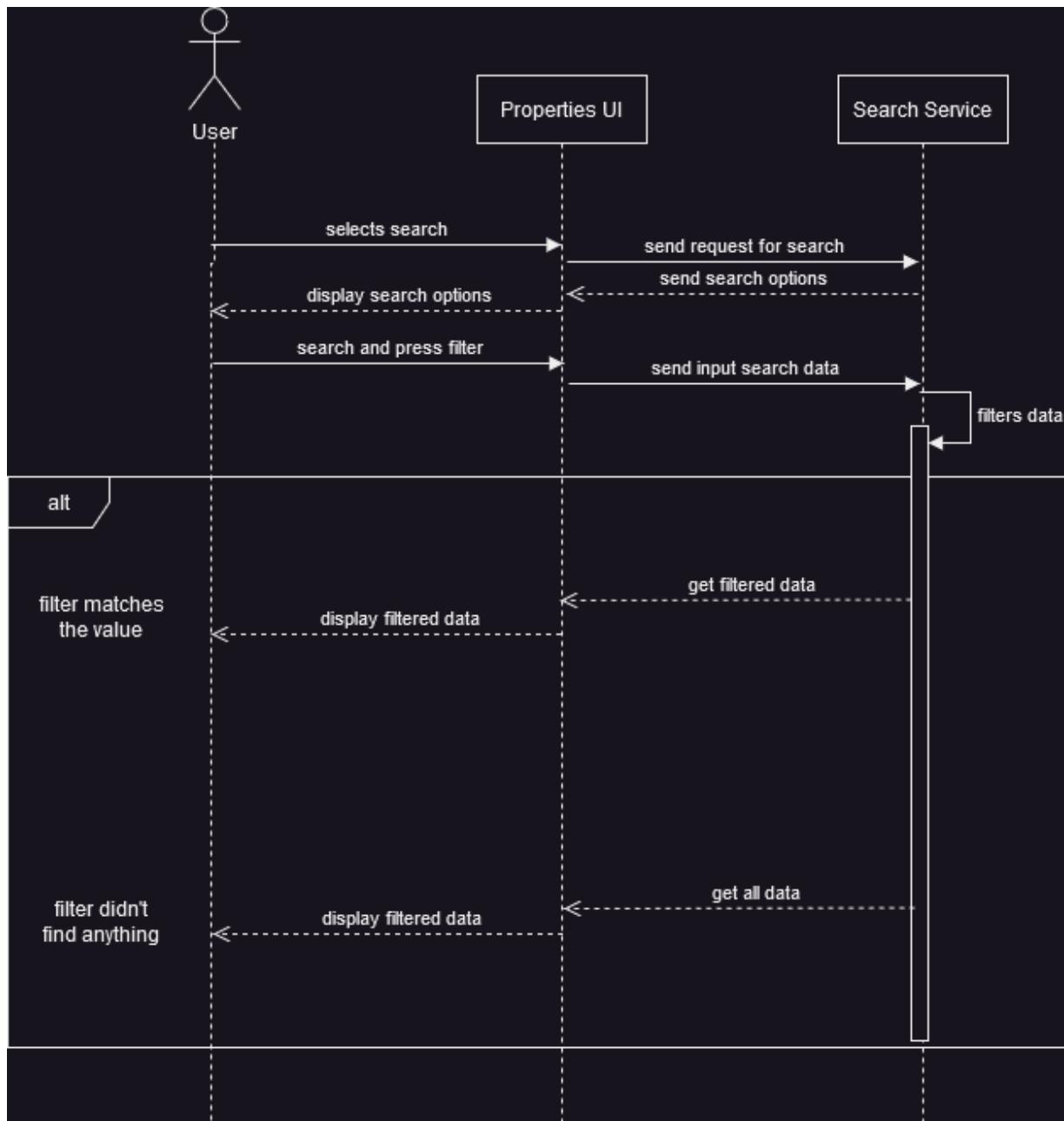


SeD_18-Listing Recommendation



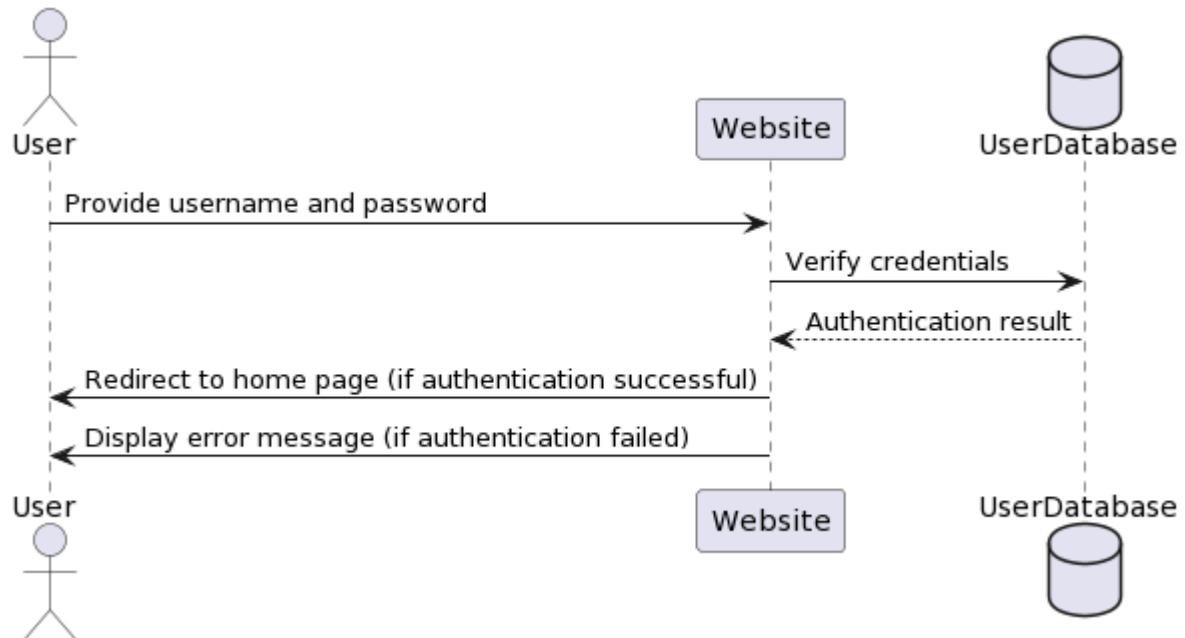
SeD_19-Review

SeD_20-Search Place

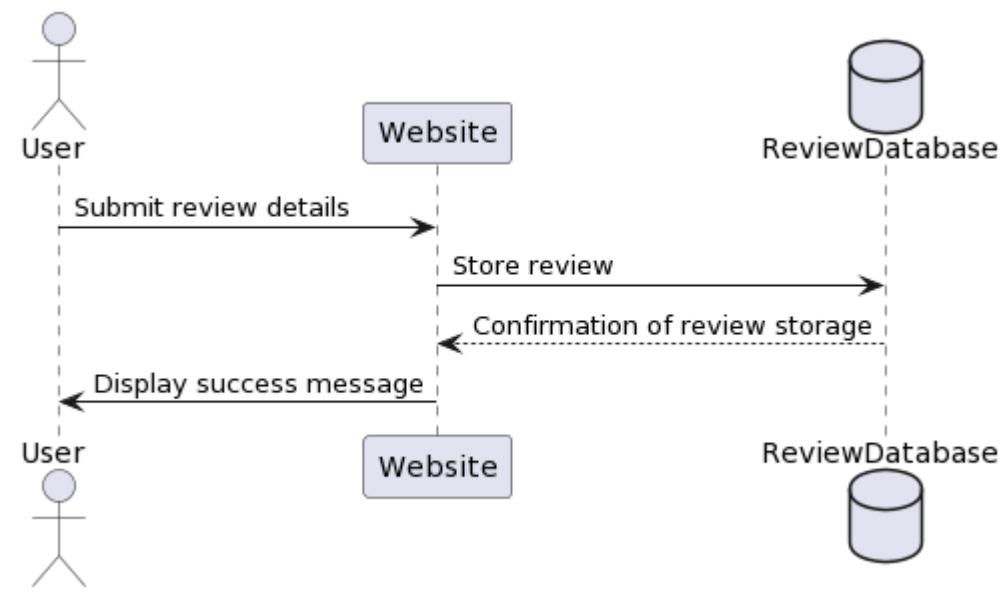


4.2.5 Collaboration Diagrams

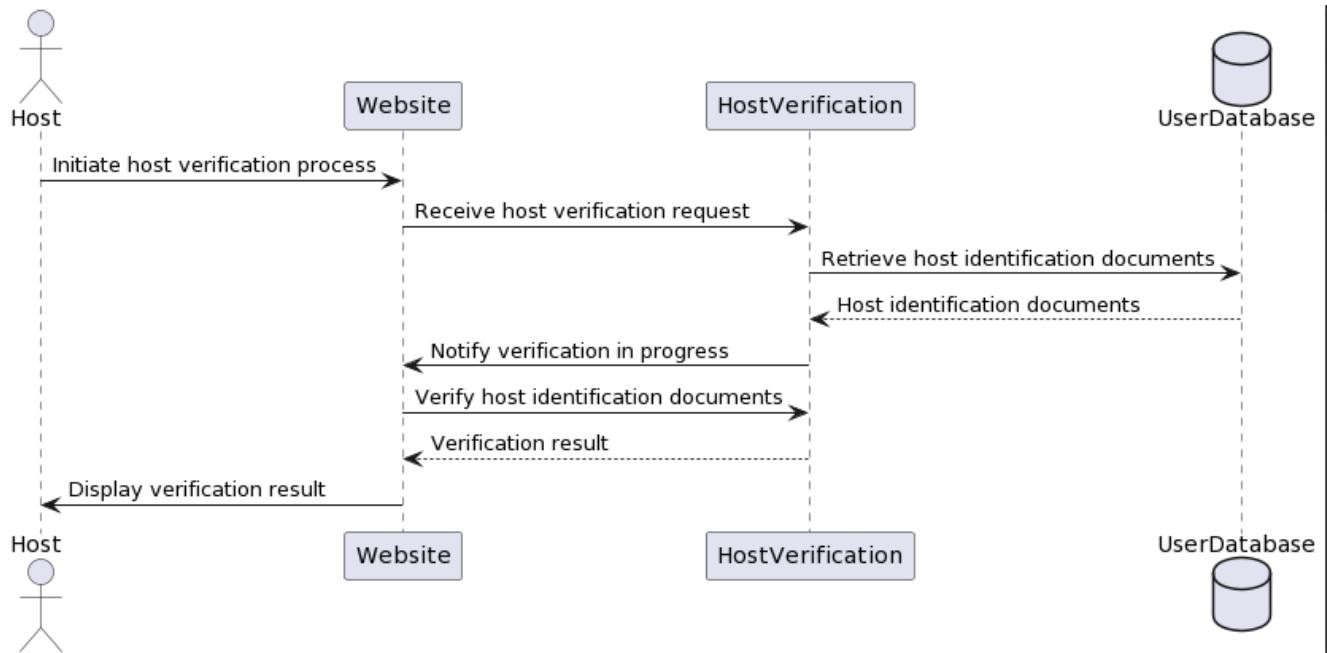
CoID_01-User Authentication



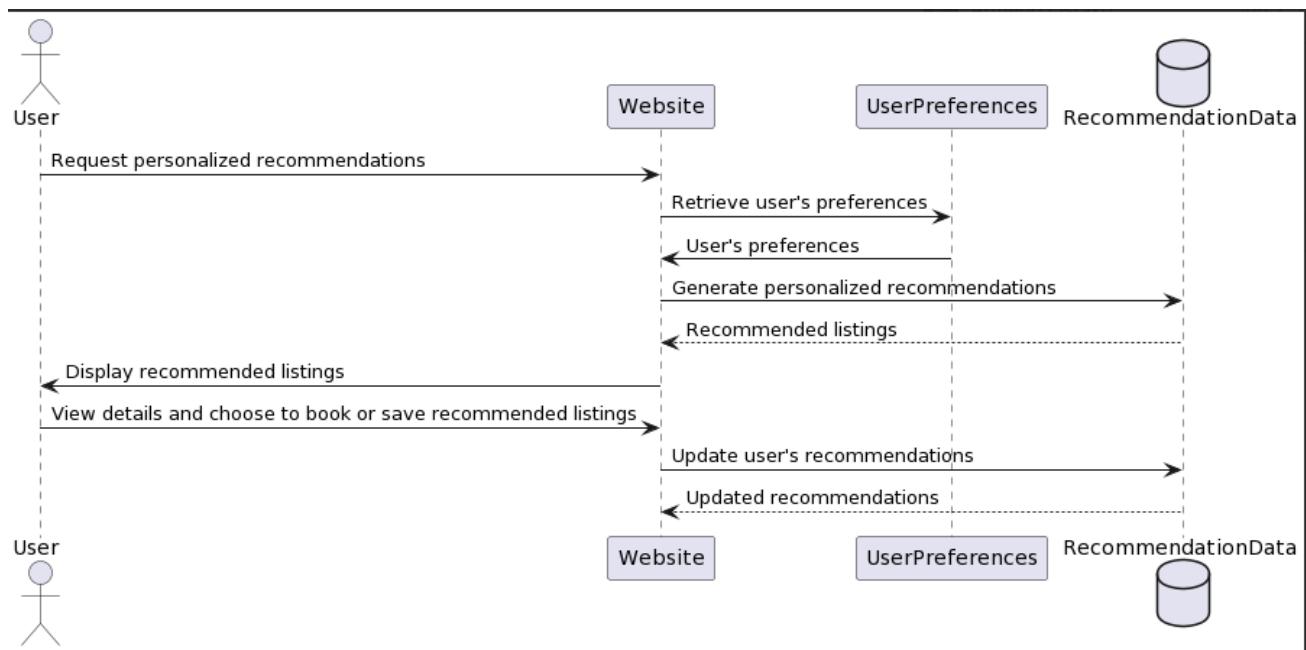
CoID_02-Adding Review



CoID_03-Host Verification Process

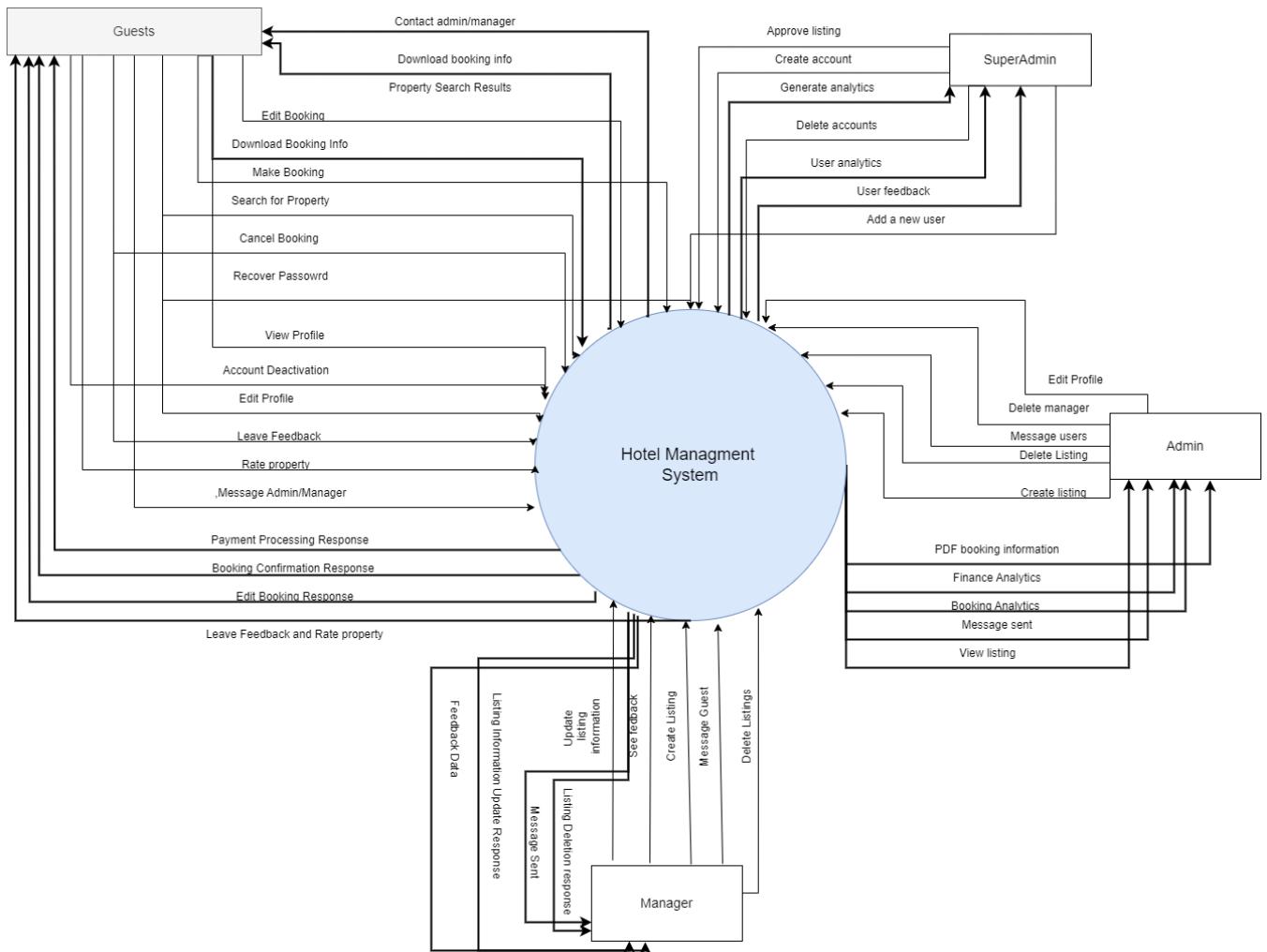


CoID_04-List Recommendation

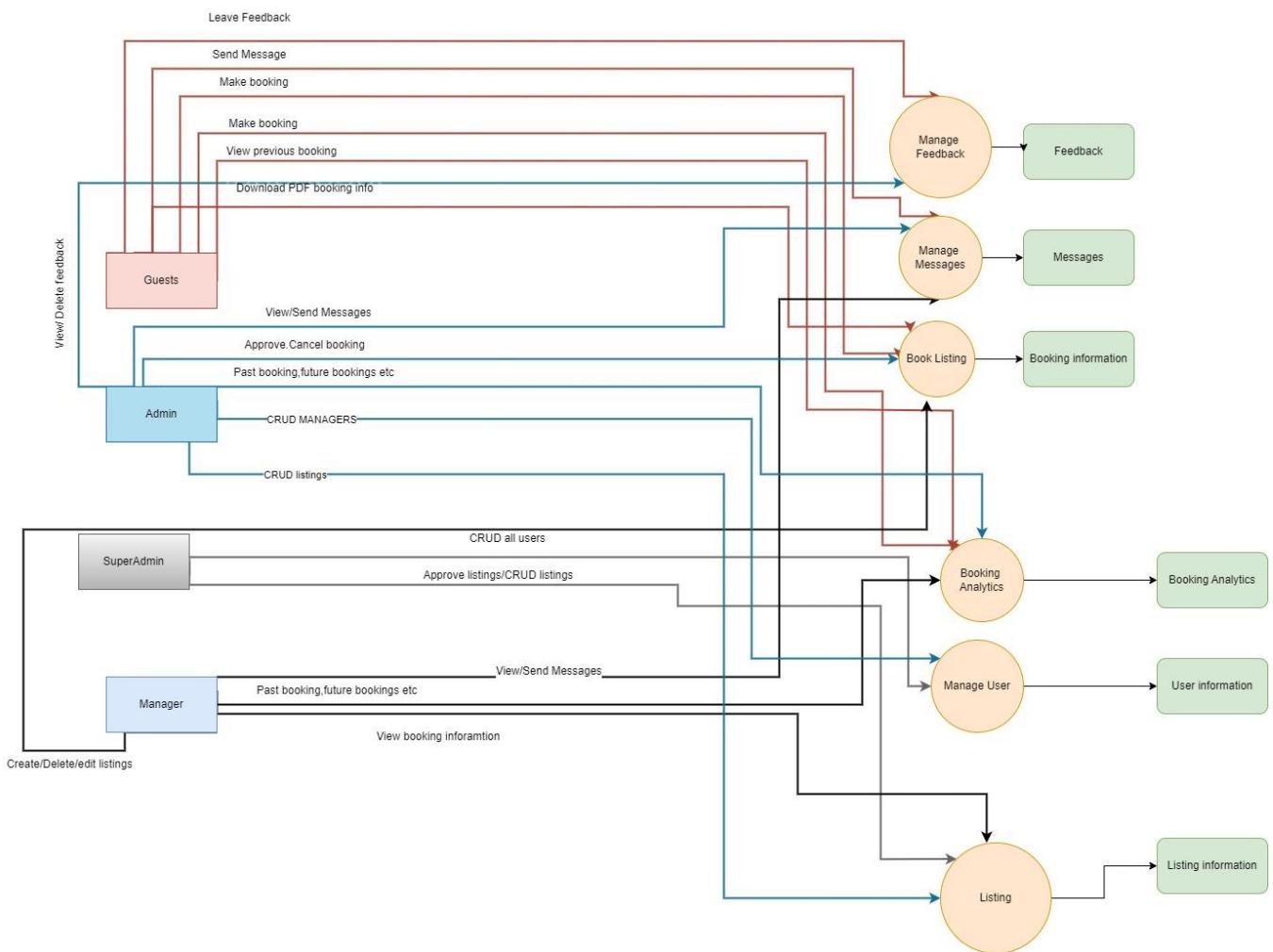


4.3 Data Flow Diagrams

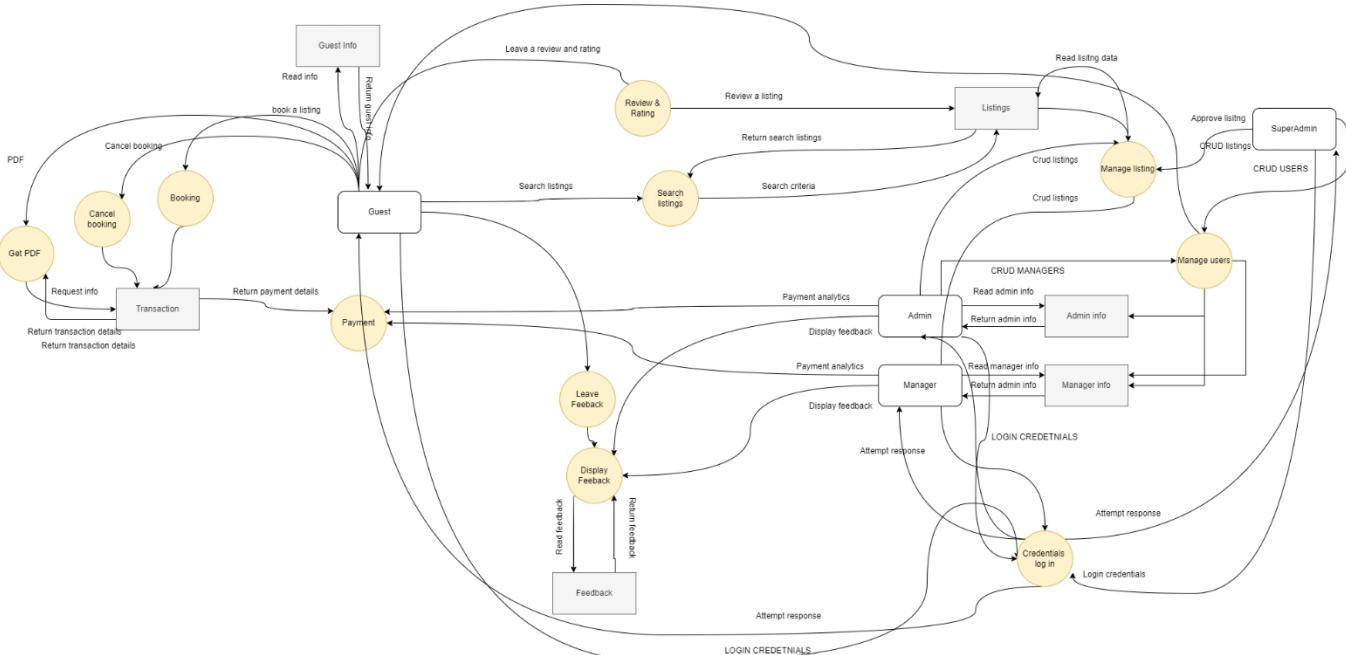
DFD level 0



DFD level 1



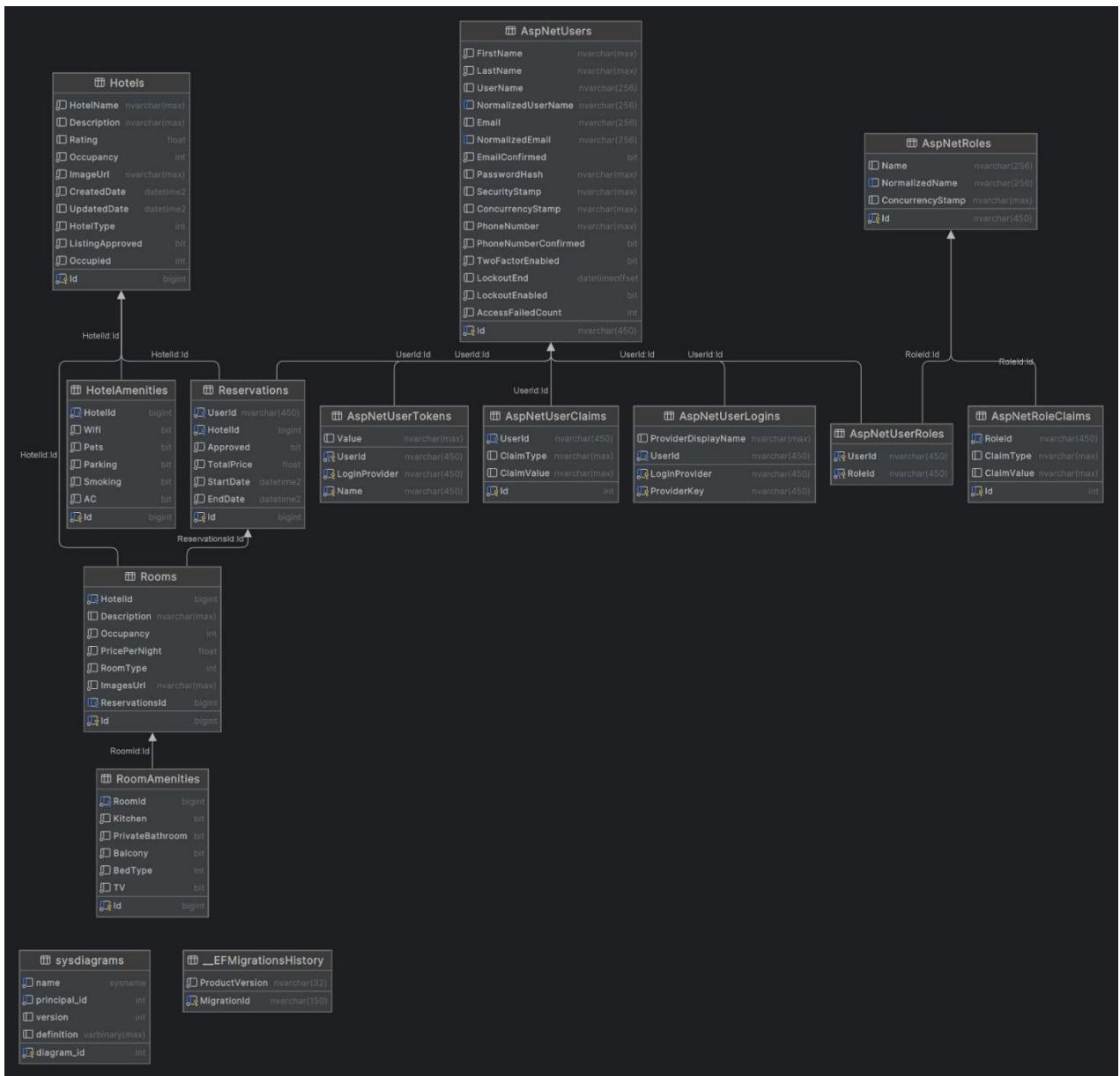
DFD level 2



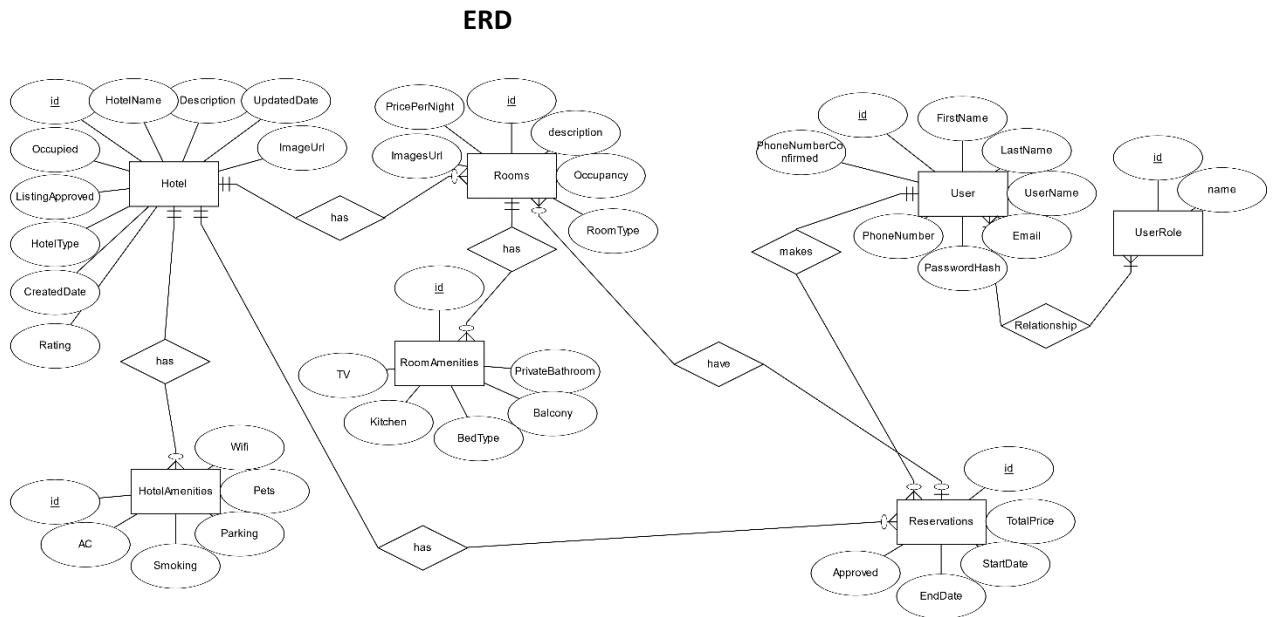
4.4 Entry Relation

4.4.1 Database Schema Design

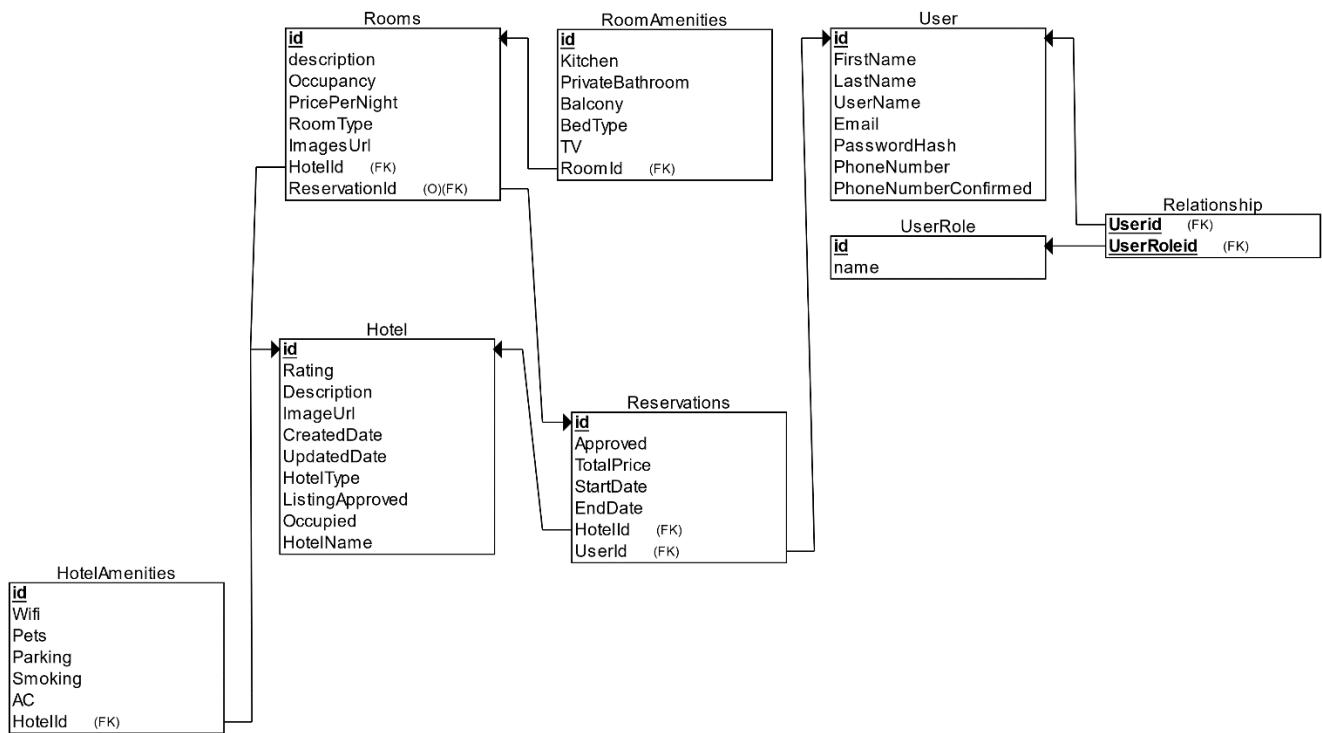
DB-Database Schema



4.4.2 Entity Relation Diagram



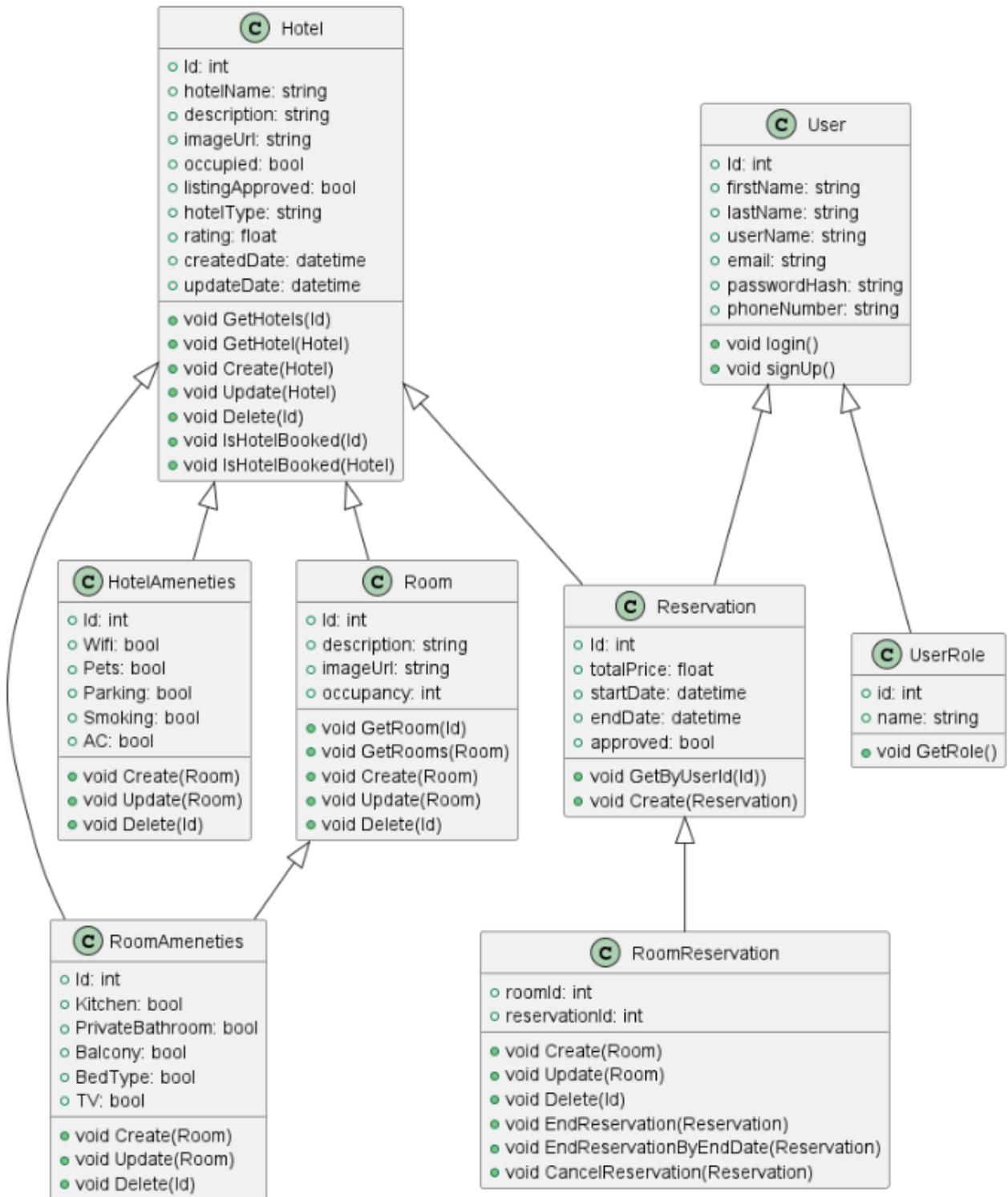
4.4.3 Relation Schema



4.5 Structural Diagrams

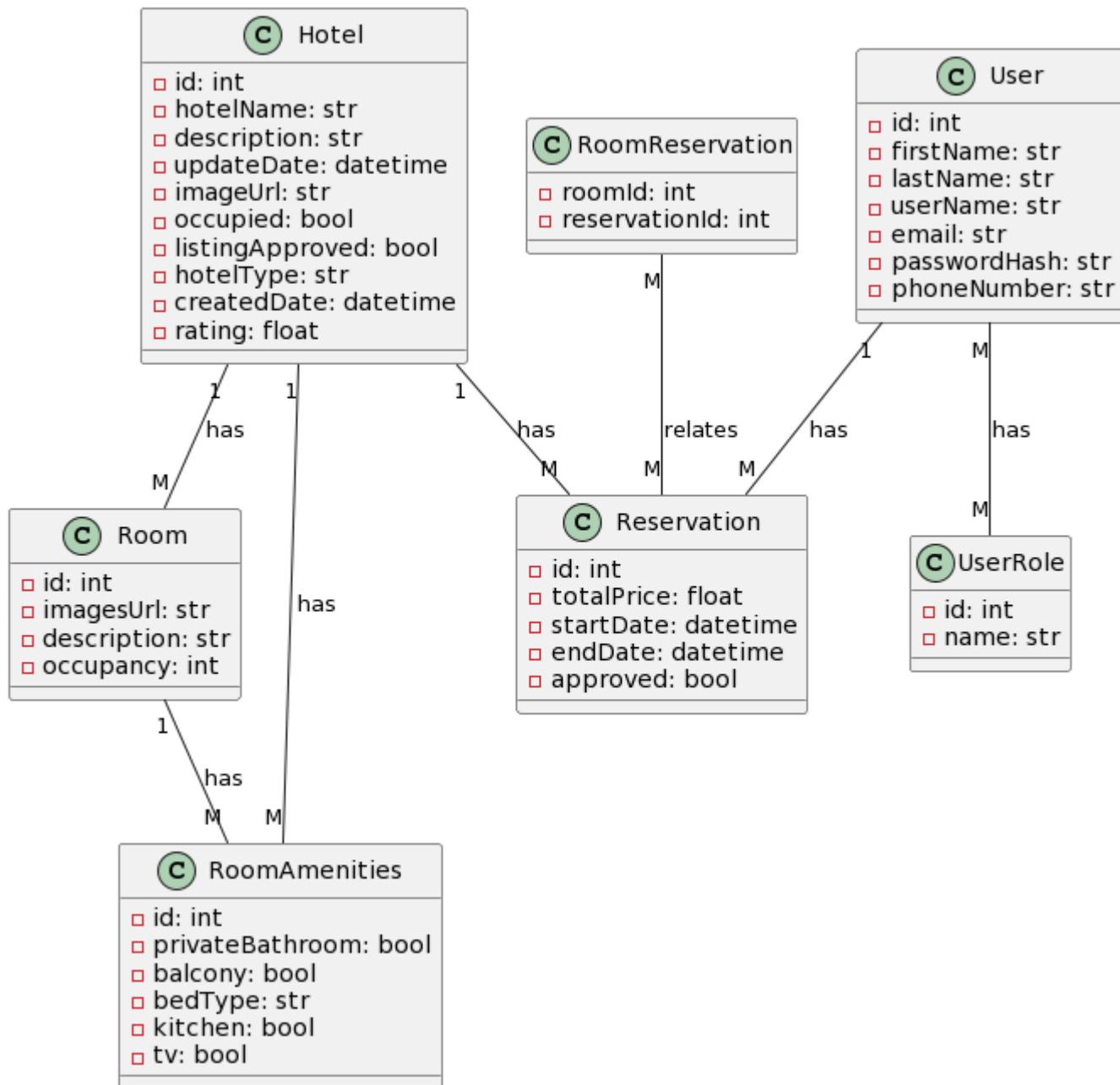
4.5.1 Class Diagram

CD-Class Diagram



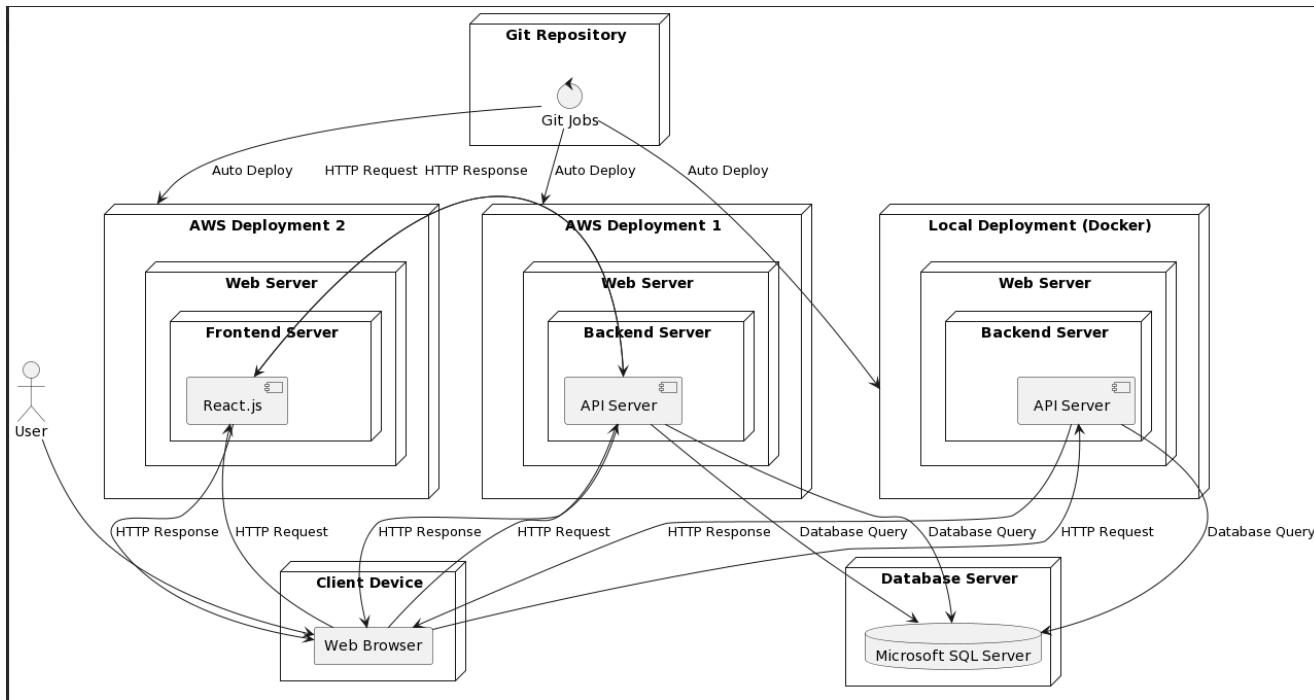
4.5.2 Object Diagrams

ObD_1



4.5.3 Deployment Diagram

DD_01



5 Implementation Technology

This section provides an overview of the technology implementation details for CheckInn, a web application built using React and .NET, deployed on AWS with MSSQL as the database. The development environment includes Docker for the local database and caching, with Redis used for caching purposes. Additionally, two deployment environments, namely testing and production, are established, each deployed via Git jobs triggered when pull requests are merged into specific branches.

Front-end Technology Stack:

1. React: CheckInn's front-end is developed using React, a popular JavaScript library for building user interfaces.
2. Additional libraries and frameworks: You may list any additional libraries or frameworks used in the project, such as React Router for handling routing, Redux for state management, or Material-UI for UI components.

Back-end Technology Stack:

1. .NET: CheckInn's back-end is built using .NET, a versatile and powerful framework for developing web applications.
2. MSSQL: The application uses Microsoft SQL Server (MSSQL) as the database management system. MSSQL provides reliable data storage and retrieval capabilities.
3. Entity Framework: To interact with the MSSQL database, CheckInn utilizes Entity Framework, an Object-Relational Mapping (ORM) framework for .NET.

Deployment Environment:

1. AWS: CheckInn is deployed on the Amazon Web Services (AWS) cloud platform. AWS offers various services and resources for hosting web applications securely and reliably.
2. Git Jobs: CheckInn leverages Git jobs, triggered by pull request merges into specific branches, to facilitate automated deployment to the testing and production environments.

Local Development:

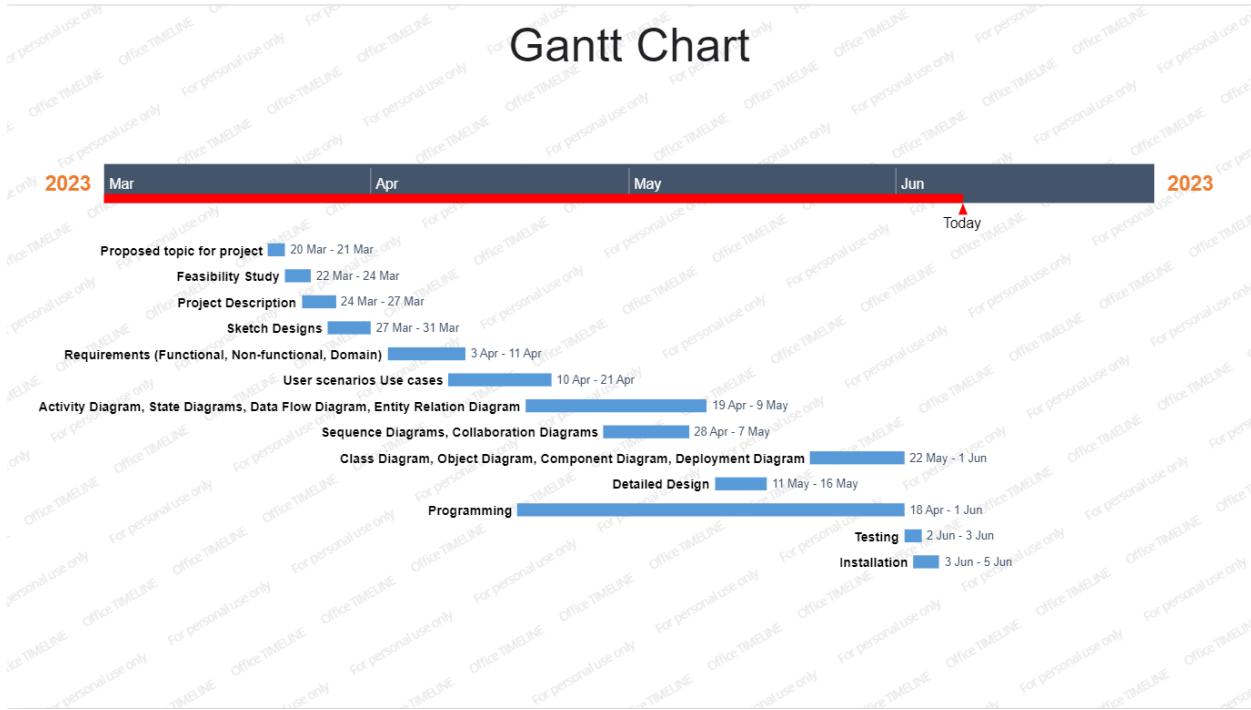
1. Docker: For local development, Docker is used to containerize the database and caching components. This approach ensures consistency and ease of setup across different development environments.
2. Database Container: The local database is containerized using Docker, allowing developers to run an instance of MSSQL locally without the need for manual installation or configuration.
3. Caching with Redis: Redis, an in-memory data structure store, is used for caching purposes. A Redis container is employed locally to enhance performance and reduce reliance on the database for frequently accessed data.

6 Project Planning

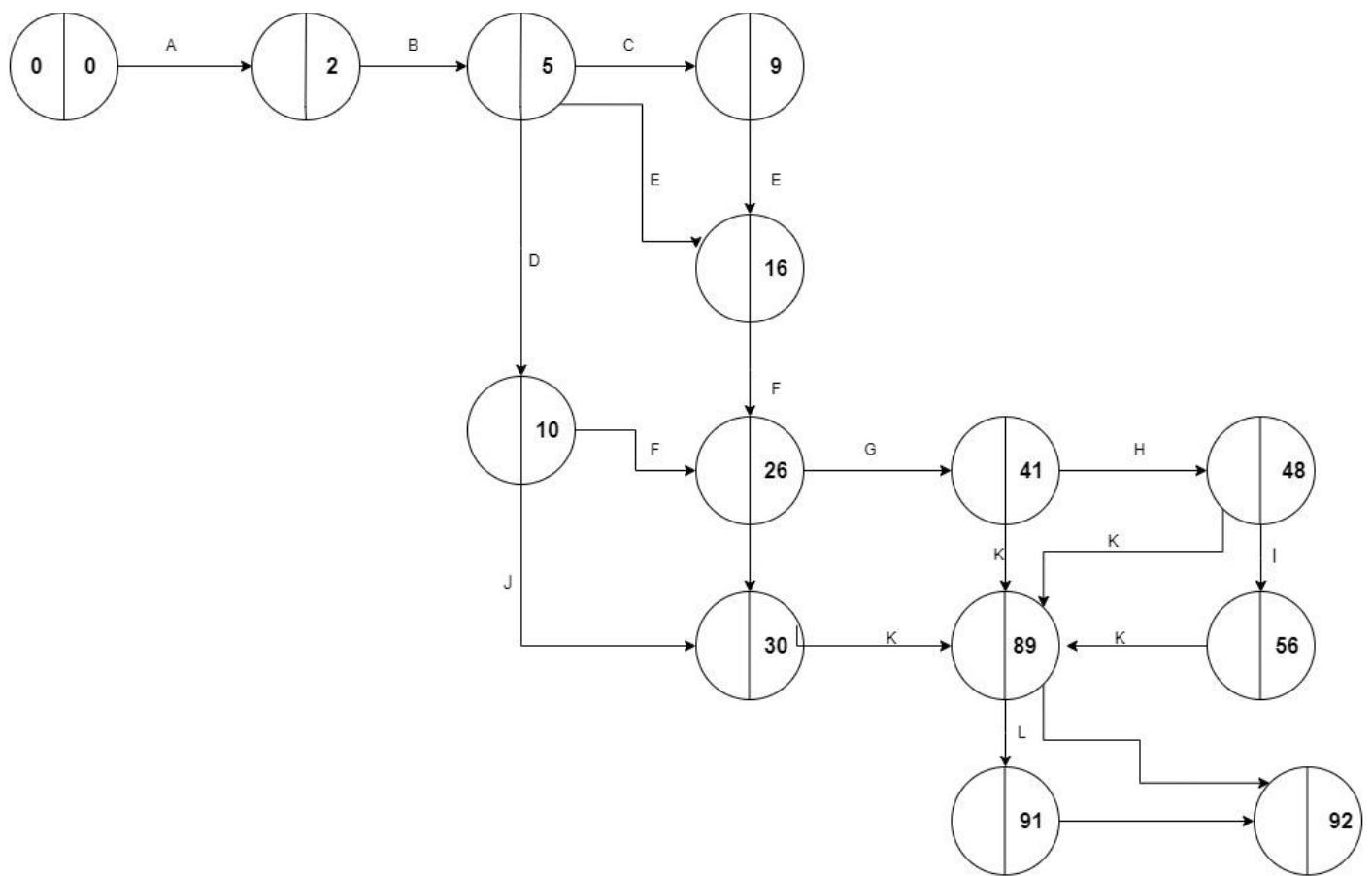
Network Analysis:

Nr	Topic	Number of Days	Dependencies
A	Proposed topic for project	2	-
B	Feasibility Study	3	A
C	Project Description	4	
D	Sketch Designs	5	
E	Requirements (Functional, Non-functional, Domain)	7	B, C
F	User scenarios Use cases	10	D, E
G	Activity Diagram, State Diagrams, Data Flow Diagram, Entity Relation Diagram	15	E, F
H	Sequence Diagrams, Collaboration Diagrams	7	G
I	Class Diagram, Object Diagram, Component Diagram, Deployment Diagram	8	H
J	Detailed Design	4	D, F
K	Programming	33	G, H, I, J
L	Testing	2	K
M	Installation	1	K, L

Gantt Chart



Network diagram



7 Appendix

7.1 Appendix A- Definitions, Acronyms and Abbreviations

AD_## - Activity Diagram
Cold_## – Collaboration Diagram
DFD_## - Data Flow Diagram
FR_## - Functional Requirement
DB – Database Schema
ERD- Entity relation diagram
RS-Relation schema
ObD- Object Diagram
CD-Class Diagram
DD-Deployment Diagram

7.2 Appendix B- References

[1] <https://www.airbnb.com>

[2] <https://www.simform.com/blog/how-make-app-like-airbnb/>

[3] <https://www.lucidchart.com/pages/data-flow-diagram>

[4] <https://www.lucidchart.com/pages/uml-class-diagram>

[5] <https://www.lucidchart.com/pages/uml-sequence-diagram>

[6] <https://www.lucidchart.com/pages/uml-activity-diagram>

[7] <https://reactjs.org/docs/getting-started.html>

[8] <https://docs.microsoft.com/en-us/dotnet/>

[9] <https://docs.microsoft.com/en-us/sql/sql-server/?view=sql-server-ver15>

7.3 Appendix C- File Format

C.1 Image File Format: The app utilizes the following image file formats:

- JPEG (Joint Photographic Experts Group): This format is used for storing and displaying high-quality images with efficient compression. It is commonly used for photographs.
- PNG (Portable Network Graphics): This format supports lossless compression and is suitable for images with transparent backgrounds or simple graphics.

C.2 Document File Format: The app supports the following document file formats:

- PDF (Portable Document Format): This format ensures the documents can be viewed and printed consistently across different devices and platforms.
- DOCX (Microsoft Word Document): This format is commonly used for text-based documents and provides compatibility with Microsoft Word.

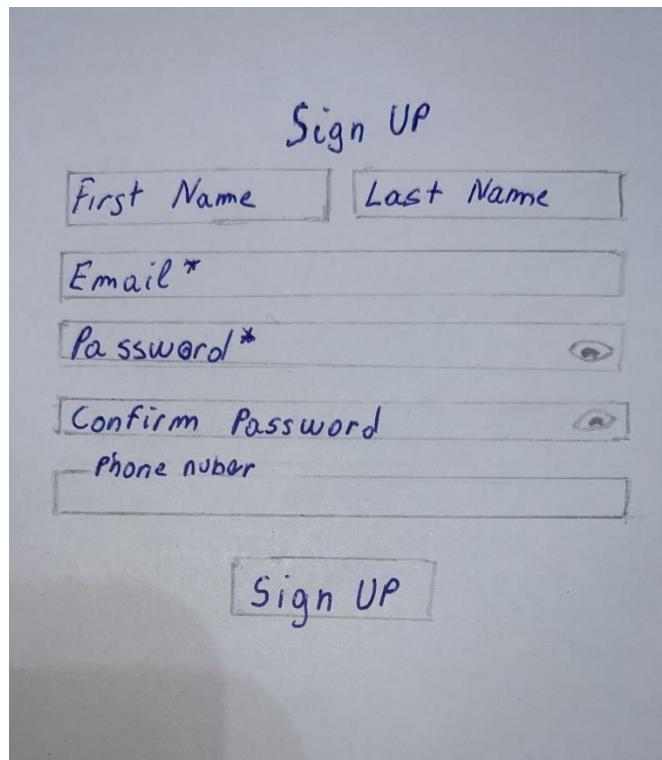
C.3 Diagram File Format: The app uses the draw.io format for diagrams. Draw.io is a web-based diagramming tool that allows users to create flowcharts, diagrams, and other visual representations.

C.4 Other File Formats:

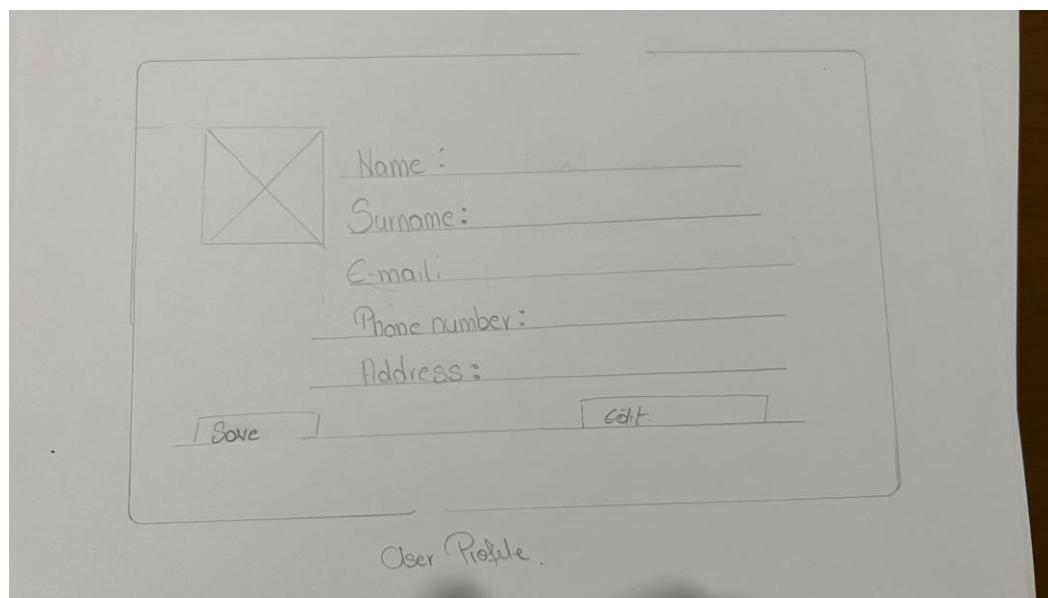
- Other image formats: In addition to JPEG and PNG, you may consider mentioning any other image formats your app supports, such as GIF (Graphics Interchange Format) or SVG (Scalable Vector Graphics).
- Additional document formats: XLSX (Microsoft Excel spreadsheet)

7.4 Appendix D- Sketches

SignUp

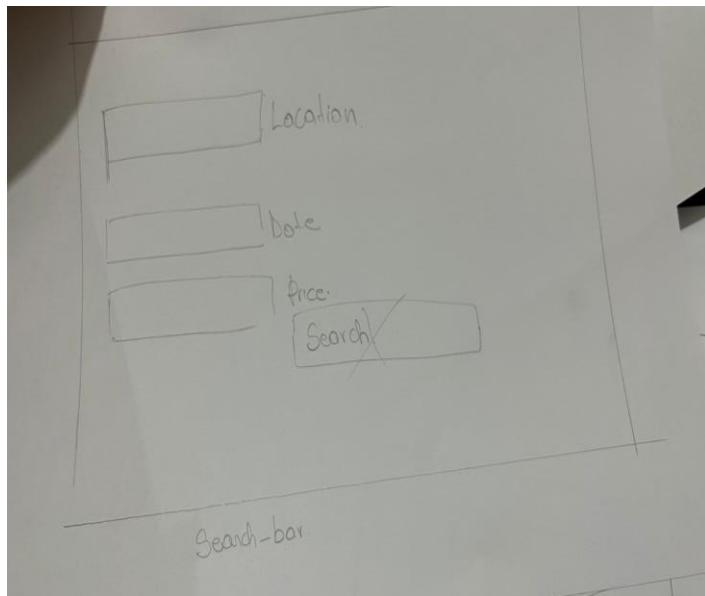


UserProfile

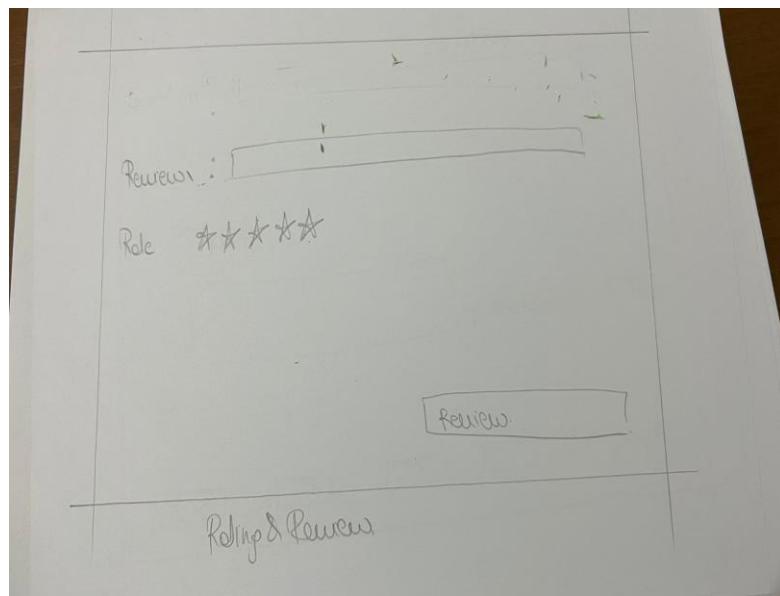


SearchBar

Hotel Management Documentation



Rating&Reviews



AccommodationListing

A hand-drawn wireframe of a search interface. At the top left, there is a label "Filter:" followed by four input fields: "location", "Price", "Rating", and "Dates". On the right side, there are two more input fields: "Check" and "Cancel". Below the search area, the text "Accommodation listing" is written.

Booking Process

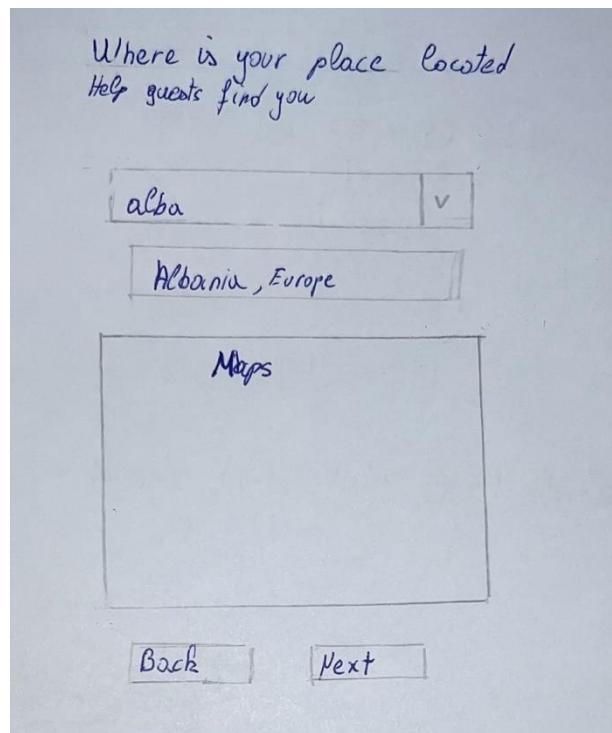
A hand-drawn wireframe of a booking process interface. It includes input fields for "No of guests", "Checkin date", "Checkout date", and "Total Cost". To the right of these fields is a large square with a diagonal cross. Below the input fields is a button labeled "Book now.". At the bottom left, the text "BookingProcess." is written.

Choose Category

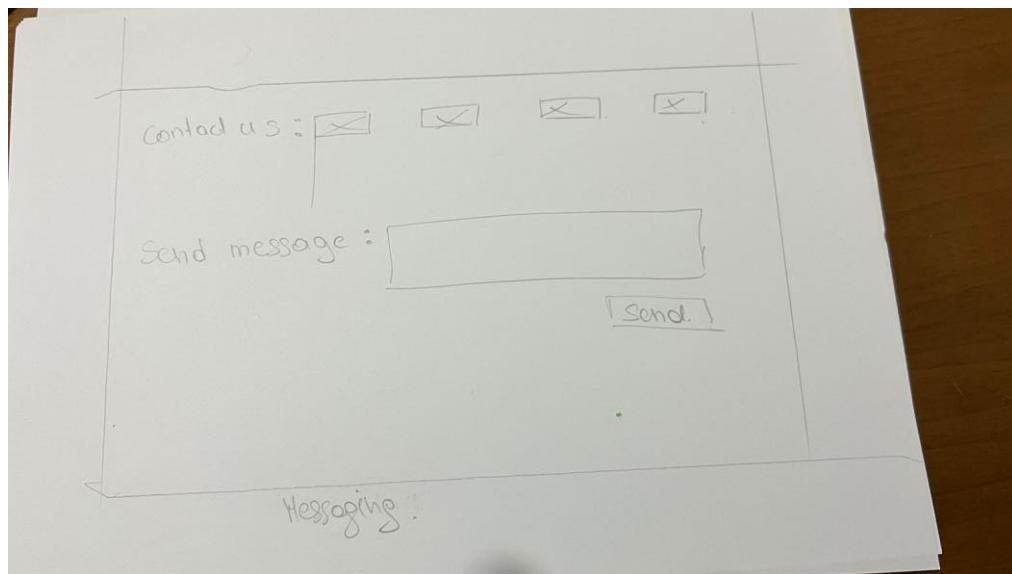
A hand-drawn wireframe of a category selection interface. The title "Which of these best describes your place" is at the top, followed by the instruction "Pick a category". There are several input boxes for categories: "Amazing", "Farms", "Surfing" (with an arrow pointing to it from the word "Image"), "Lakefront", "Lakefront", "Lakefront", "Lakefront", and "Lakefront". At the bottom is a "Next" button.

Hotel Management Documentation

Location



Messaging



Room Amentities

Setup your rooms

Room 1

Description

Minimum day prebooking
1

Price per night
0 LEK

Number of Guests
1

Default days per Booking
1

1

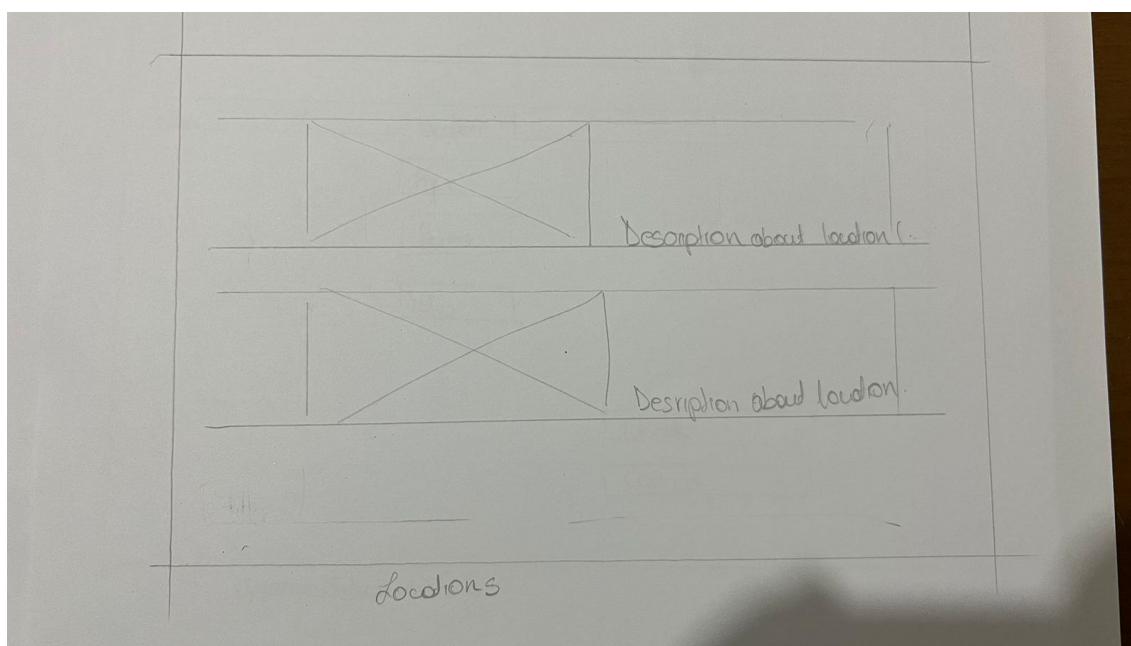
Room Amenities

- Kitchen Private Bath Balcony TV

Back

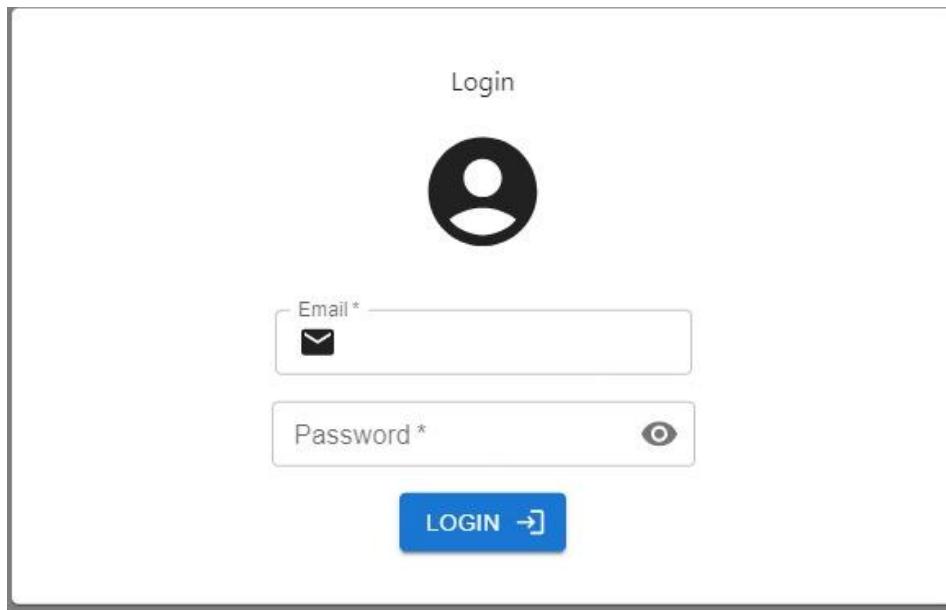
Next

Locations



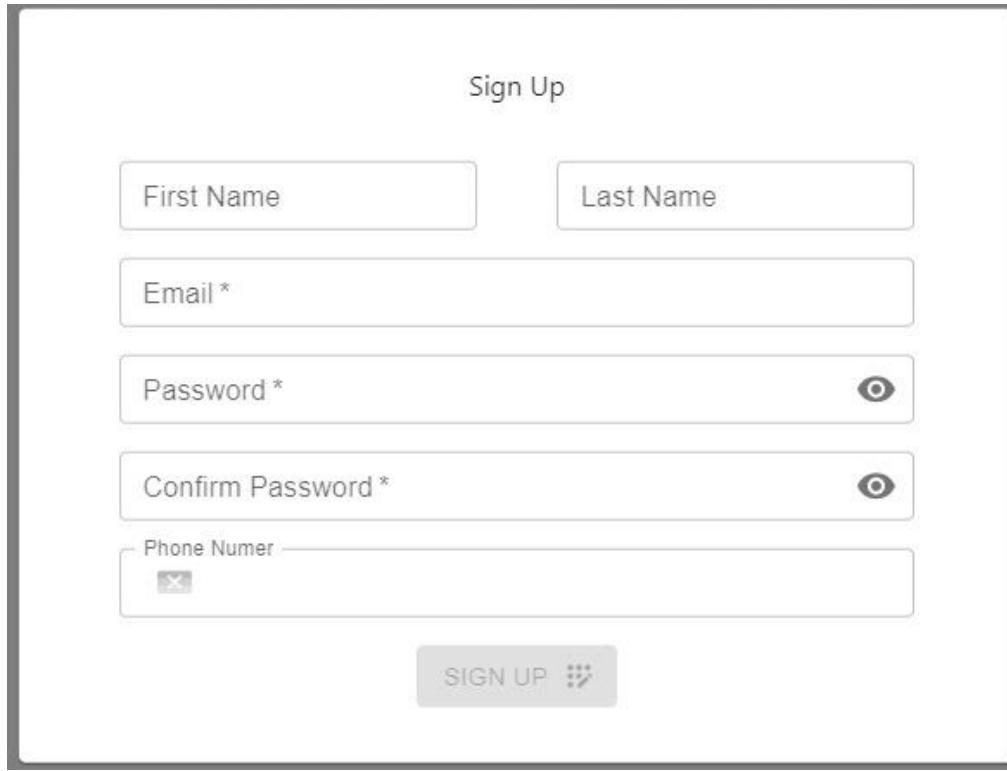
7.5 Appendix E- Detailed Designs

Log In



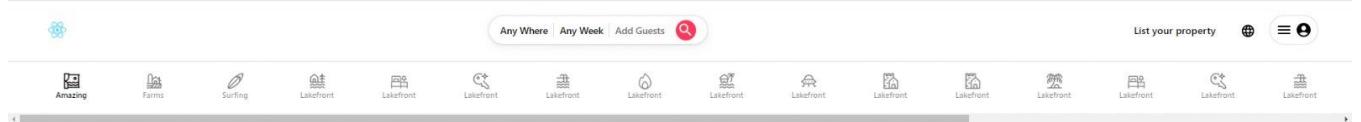
The login form features a large central user icon. Below it are two input fields: 'Email *' with a mail icon and 'Password *' with a visibility toggle icon. A blue 'LOGIN →' button is positioned below the password field.

Sign Up



The sign up form includes fields for 'First Name' and 'Last Name'. It also features five input fields: 'Email *', 'Password *' with a visibility toggle, 'Confirm Password *' with a visibility toggle, 'Phone Number' with a phone icon, and a 'SIGN UP' button with a gear icon.

Front Page



Listing creation

Which of these best describes your place?

Pick a category

Amazing

Farms

Surfing

Lakefront

Lakefront

Lakefront

Lakefront

Lakefront

Lakefront

Lakefront

NEXT

Where is your place located?

Help guests find you!

alba



 Albania, Europe

 Svalbard and Jan Mayen, Europe



BACK

NEXT

Share some basics about your place

What amenities do you have?

Guests

How many guests do you allow?



1



Rooms

How many rooms do you have?



2



Bathrooms

How many bathrooms do you have?



1



BACK

NEXT

Setup your rooms

What amenities do they have?

Room 1

Description _____

Number of Guests * _____
1

Minimum days per booking * _____
1

Default days per Booking * _____
1

Price per night* _____
0 LEK

Room Amenities

Kitchen Private Bath Balcony TV

Room 2

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How would you describe your place?

Short and sweet works best!

Title *

Description *

[BACK](#) [NEXT](#)

Now, set your price

How much do you charge per night?

Price * ^ LEK

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[CREATE](#)