



**Epoka University**

**Faculty of Engineering and Architecture**

**Department of Computer Engineering**

**CEN 302 – Software Engineering**

# **Hotel Management Requirements Specification**

**May , 2023**

***Hotel Management***

***Requirements***

***Specification First Draft***

***May, 2023***

Group Members

Armend Ostaku

Dario Pipa

Elisa Haxhillazi

Enkel Murati

Kleidi Kertusha

Klevi Mecaj

Sara Martiri

Igli Shqarri



## Table of Contents

<b>1.</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>5</b>
1.1	PROJECT OVERVIEW.....	5
1.2	PURPOSE AND SCOPE OF THIS SPECIFICATION.....	5
<b>2.</b>	<b>PRODUCT/SERVICE DESCRIPTION .....</b>	<b>6</b>
2.1	PRODUCT CONTEXT .....	6
2.2	USER CHARACTERISTICS.....	7
2.3	ASSUMPTIONS.....	8
2.4	CONSTRAINTS .....	9
2.5	DEPENDENCIES .....	10
<b>3.</b>	<b>REQUIREMENTS.....</b>	<b>11</b>
3.1	FUNCTIONAL REQUIREMENTS .....	11
3.2	NON-FUNCTIONAL REQUIREMENTS .....	27
3.2.1	<i>Product Requirements</i> .....	27
3.2.1.1	User Interface Requirements .....	27
3.2.1.2	Learnability .....	30
3.2.1.3	Accessibility .....	30
3.2.1.4	Efficiency .....	30
3.2.1.5	Memorability.....	30
3.2.1.6	Errors .....	31
3.2.1.7	Satisfaction .....	31
3.2.1.8	Capacity .....	31
3.2.2	<i>Organizational Requirements</i> .....	31
3.2.2.1	Availability .....	31
3.2.2.2	Latency .....	31
3.2.2.3	Monitoring.....	32
3.2.2.4	Maintenance.....	32
3.2.2.5	Operations.....	32
3.2.2.6	Standards Compliance .....	33
3.2.2.7	Portability .....	33
3.2.3	<i>External Requirements</i> .....	33
3.2.3.1	Security.....	33
3.2.3.2	Protection .....	34
3.2.3.3	Authorization and Authentication.....	34
3.3	DOMAIN REQUIREMENTS.....	34
<b>4.</b>	<b>SOFTWARE DESIGN / DIAGRAMS .....</b>	<b>35</b>
4.1	REQUIREMENTS ANALYSIS .....	35
4.1.1	<i>User Scenarios</i> .....	35
4.1.1.1	User Scenarios List.....	35
4.1.1.2	User Scenarios Extended .....	36
4.1.2	<i>User Cases</i> .....	42
4.2	BEHAVIORAL DIAGRAMS.....	42
4.2.1	<i>Use Case Diagrams</i> .....	42

## ***Hotel Management Platform Requirements Specification***

4.2.2	<i>Activity Diagrams</i> .....	42
4.2.3	<i>State Diagrams</i> .....	42
4.2.4	<i>Sequence Diagrams</i> .....	42
4.2.5	<i>Collaboration Diagrams</i> .....	42
<b>4.3</b>	<b>DATA FLOW DIAGRAMS</b> .....	<b>42</b>
<b>4.4</b>	<b>ENTITY RELATION</b> .....	<b>42</b>
4.4.1	<i>Database Schema Design</i> .....	43
4.4.2	<i>Entity Relation Diagram</i> .....	43
<b>4.5</b>	<b>STRUCTURAL DIAGRAMS</b> .....	<b>43</b>
4.5.1	<i>Class Diagram</i> .....	43
4.5.2	<i>Object Diagrams</i> .....	43
4.5.3	<i>Component Diagrams</i> .....	43
4.5.4	<i>Deployment Diagram</i> .....	43
<b>5.</b>	<b>IMPLEMENTATION TECHNOLOGY</b> .....	<b>43</b>
<b>6.</b>	<b>PROJECT PLANNING</b> .....	<b>43</b>
<b>7.</b>	<b>APPENDIX</b> .....	<b>43</b>
<b>7.1</b>	<b>APPENDIX A - DEFINITIONS, ACRONYMS AND ABBREVIATIONS</b> .....	<b>43</b>
<b>7.2</b>	<b>APPENDIX B - REFERENCES</b> .....	<b>43</b>
<b>7.3</b>	<b>APPENDIX C - FILE FORMAT</b> .....	<b>43</b>
<b>7.4</b>	<b>APPENDIX D - SKETCHES</b> .....	<b>43</b>
<b>7.5</b>	<b>APPENDIX E - DETAILED DESIGNS</b> .....	<b>43</b>

# **1. Executive Summary**

## **1.1 Project Overview**

The travel industry has experienced a significant shift in recent years, with the rise of online platforms offering a range of options for travelers to book their accommodation. There is still a need for a SaaS app that offers features that cater to the specific needs of travelers. This SaaS app aims to provide a user-friendly platform for travelers to find and book their ideal accommodations, while also offering hosts the ability to manage their properties with ease.

Therefore for this problem we suggest a software solution implemented through an web application that will satisfy the needs of both clients who need to book their next home,hotel etc, as well as helping hosts out in aspects of managing their listings better and as well as having a target audience without the need for further advertising.

## **1.2 Purpose and Scope of this Specification**

The purpose of this SaaS app is to provide a comprehensive platform that simplifies the process of booking and managing accommodations for travelers and hosts. The app should allow users to search for properties based on their preferences, including location, price range, amenities, and more. It should also offer a secure payment system that allows for easy and hassle-free transactions between hosts and guests. Additionally, the app should provide a range of management tools for hosts, including the ability to create and manage their property listings, view their booking history, and communicate with guests. The app should be intuitive and easy to navigate, ensuring that users can quickly find what they're looking for and make informed decisions about their bookings. This documentation is intended for all users of the SaaS app, including travelers and hosts. It will provide detailed information on how the app works, its features and functionalities, and any requirements or limitations that users should be aware of.

### **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 form 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 politics.
- 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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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.	0	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	0	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.	0	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	0	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	0	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.	0	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.		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.		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		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 .		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		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		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.		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.		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	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 host by the messaging system in the app.
US_11	Host creates a listing (Host-admin/manager)	Hosts can create listings for their accommodation .
US_12	Admin/Manager deletes a listing	Admin/Manager can delete and 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 can recover their password if forgotten

### 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 Patient"
- 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.

**4.1.2 User Cases**

<b>Name</b>	User logs in
<b>Summary</b>	User enters personal information to access his account.
<b>Actor</b>	SuperAdmin / Admin/ Manager/Guests
<b>Description</b>	User gains access on his account after typing his correct username and password.
<b>Precondition</b>	User must have an active account
<b>Alternatives</b>	The user can access only one account at time and can have only one role.
<b>Post Condition</b>	User is logged on his account.

<b>Name</b>	User changes password
<b>Summary</b>	User goes to the corresponding page to change his password.
<b>Actor</b>	SuperAdmin / Admin/ Manager/Guests
<b>Description</b>	User types the old password and the new one twice in order to change it
<b>Precondition</b>	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
<b>Alternatives</b>	If the fields are typed incorrectly, an alert will show and the user can try again
<b>Post Condition</b>	After saving the user will be redirected to log in with the new password .

<b>Name</b>	Add a new admin/manager
<b>Summary</b>	SuperAdmin / Admin create new admins and managers if needed.
<b>Actor</b>	SuperAdmin / Admin
<b>Description</b>	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.
<b>Precondition</b>	The SuperAdmin/Admin must have the proper authorization to add a new admin/manager.
<b>Alternatives</b>	If the inputs are incorrect or incomplete, the system will show an error message, and the SuperAdmin/Admin must correct the form before resubmitting.
<b>Post Condition</b>	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.

<b>Name</b>	Generate and Download Revenue and Booking Analytics Reports
<b>Summary</b>	User enters personal information to access his account.
<b>Actor</b>	SuperAdmin / Admin/ Manager
<b>Description</b>	SuperAdmin, manager, and admin can generate and download reports on revenue generated and booking analytics.
<b>Precondition</b>	The user must have appropriate access privileges to generate and download reports.
<b>Alternatives</b>	None
<b>Post Condition</b>	The user can download the report in a variety of formats, such as PDF, CSV, or Excel.

<b>Name</b>	Search for a specific property
<b>Summary</b>	Guests search for a specific property based on their preferences
<b>Actor</b>	Guests
<b>Description</b>	Guests will enter the name of the specific property or location they are searching for.
<b>Precondition</b>	Guests must be logged in
<b>Alternatives</b>	There is no match for their properties and the guests is show “No match”
<b>Post Condition</b>	Guest can see the list of properties that match their search filter.

<b>Name</b>	Delete admin/manager
<b>Summary</b>	SuperAdmin/Admin remove an admin/manager account from the system
<b>Actor</b>	SuperAdmin/Admin
<b>Description</b>	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.
<b>Precondition</b>	SuperAdmin/Admin must be logged in
<b>Alternatives</b>	None
<b>Post Condition</b>	An admin or manager is removed from the system

<b>Name</b>	Guests makes a booking
<b>Summary</b>	Guest books a property for a period of time
<b>Actor</b>	Guests
<b>Description</b>	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.
<b>Precondition</b>	Guest must be logged in , and the property must be available for the dates that he is interested in
<b>Alternatives</b>	The host can decline/accept the booking
<b>Post Condition</b>	The booking is confirmed and guests receives confirmation

<b>Name</b>	Download booking confirmation as PDF
<b>Summary</b>	Guests can download their booking confirmation as PDF
<b>Actor</b>	Guests
<b>Description</b>	Guest after making a booking can download their booking confirmation as a PDF.
<b>Precondition</b>	Guest must be logged in and have made a booking.
<b>Alternatives</b>	None
<b>Post Condition</b>	A PDF document is downloaded .

<b>Name</b>	View Profile and Edit
<b>Summary</b>	Guests or host views their profile information and edit some information.
<b>Actor</b>	Users
<b>Description</b>	Guest/Host accesses their personal profile information.
<b>Precondition</b>	Guest/Hosts must be logged in.
<b>Alternatives</b>	None
<b>Post Condition</b>	A guest or host is able to view their profile information and change it if they want.

<b>Name</b>	Guest contacts Admin/Manager via messaging system
<b>Summary</b>	Guests sends a message to an admin/manager using the messaging system and viceversa
<b>Actor</b>	Guests/Admin/Manager
<b>Description</b>	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.
<b>Precondition</b>	Guest/hosts must be logged in.
<b>Alternatives</b>	Guest/hosts may not respond
<b>Post Condition</b>	Message is sent and a notification is sent to the receiver .

## 4.2 Behavioral Diagrams

### 4.2.1 Use Case Diagrams

### 4.2.2 Activity Diagrams

### **4.2.3 State Diagrams**

### **4.2.4 Sequence Diagrams**

### **4.2.5 Collaboration Diagrams**

## **4.3 *Data Flow Diagrams***

## **4.4 *Entry Relation***

#### **4.4.1 Database Schema Design**

#### **4.4.2 Entity Relation Diagram**

### **4.5 *Structural Diagrams***

#### **4.5.1 Class Diagram**

#### **4.5.2 Object Diagrams**

#### **4.5.3 Component Diagrams**

#### **4.5.4 Deployment Diagram**

## **5 Implementation Technology**

## **6 Project Planning**

## **7 Appendix**

### **7.1 *Appendix A- Definitions, Acronyms and Abbreviations***

### **7.2 *Appendix B- References***

### **7.3 *Appendix C- File Format***

### **7.4 *Appendix D- Sketches***

### **7.5 *Appendix E- Detailed Designs***