
Vision Document

for

Homestay Booking Website Project

Version 1.0

Prepared by

Group 6

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Date: 05/05/2024

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REVISIONS

Version	Primary Author(s)	Description of Version	Date Completed
#1	Group 6	Initial Version	05/05/24

1. Introduction

1.1 Purpose

The purpose of this vision document is to outline the overarching goals, scope, and functionalities of the Homestay Booking System. It aims to provide a clear roadmap for the development and implementation of a platform that revolutionizes the homestay booking experience for both travelers and homestay managers.

1.2 Scope

This vision document encompasses the essential features and functionalities that will form the core of the Homestay Booking System. It defines the target audience, their needs, and how the platform will address those needs to create a seamless, secure, and scalable homestay booking experience.

1.3 Definitions, acronyms, and abbreviations

API Application programming interface

1.4 Document conventions

Headings Arial/16 font size/Bold
Subheadings Arial/14 font size/Bold
Body Times New Roman/11 font size

Blue underlined texts are referenced links, special highlighting is done by making the text bold so that important keywords can easily be differentiated.

1.5 References

RUP Vision Document for the Home Appliance Control System: Defining Stakeholders, Goals, and COTS Components Technical Report UTDCS-17-04

Retrieved from: <https://www.upc.edu/gessi/events/recots04/UTDCS-17-04.pdf>

Vision document template and example provided by teaching assistant.

2. Positioning

2.1 Business opportunity

The Homestay Booking System serves two main groups: travelers seeking authentic cultural experiences through homestays and hosts wanting to rent out their vacant rooms. Travelers are drawn to homestays for the chance to immerse themselves in local culture, while hosts benefit by monetizing their space and sharing their heritage. The platform provides an easy-to-use interface for both parties, allowing hosts to list accommodations and manage bookings, and travelers to search, book, and communicate seamlessly.

Revenue is generated through commission and transaction fees, with potential for additional income from premium features or advertising. With the growing demand for cultural experiences and homestay stays, our platform has the potential for significant growth, benefiting both travelers and hosts alike.

2.2 Problem statement

The problem	Travelers often encounter challenges in managing their bookings and finding accommodations that align with their preferences, especially when seeking to experience local culture through homestays. They face difficulties in navigating through limited information and booking processes, particularly in less developed tourist areas. Meanwhile, homestay hosts strive to rent out their vacant rooms to cater to travelers but they face difficulties in reaching potential customers, managing reservations, payments, and marketing to travelers.
Affects	Cultural travelers, business travelers, leisure travelers, travel enthusiasts and budget travelers, homestay hosts, etc.
The impact of which is that	Travelers may face frustration and missed opportunities in finding suitable accommodations, while homestay hosts encounter limitations in attracting guests and managing their business efficiently.
A successful solution would be	The creation of a comprehensive homestay management website that addresses various challenges faced in the industry. This platform would offer personalized homestay recommendations based on user preferences, centralized booking management for streamlined reservation handling, and up-to-date, accurate homestay information. Additionally, integrated booking and payment functionalities would ensure a seamless booking experience, complemented by a user-friendly interface designed to simplify homestay search, booking, and management tasks.

2.3 Product position statement

For	Cultural travelers, business travelers, leisure travelers, travel enthusiasts and budget travelers, homestay hosts, etc.
Who	Often face challenges in managing their homestay bookings and finding the perfect homestay for their needs, want to stay in homestays to experience local culture or have vacant rooms for rent but have difficulty reaching potential customers, managing bookings, payments and marketing to travelers.
The Homestay Booking System	Is a software product
Unlike	Traditional platforms that primarily focus on hotels, the Homestay Booking System specializes in catering to travelers' desires for unique local cultural experiences through homestays. We connect travelers with homestay hosts offering vacant

	rooms to share their living space and local culture. Unique features of Homestay Booking System include preference-based search options, convenient payments, and easy booking management tools.
Our product	Is designed to be user-friendly, offering an intuitive interface for easy searching, booking, and management of homestays. It provides convenience by efficiently matching accommodations to guests' needs, saving both time and effort. With detailed and accurate information, our platform ensures a reliable and secure booking experience, giving guests peace of mind throughout their stay.

3. Stakeholder descriptions

3.1 Market demographics

Market demographics for the Homestay Booking system reveals a diverse range of target customer groups. Travelers, including culture enthusiasts, young travelers, solo travelers, and family travelers, seek authentic cultural experiences and budget-friendly accommodations or often face challenges in managing bookings and finding homestays that align with their preferences. Meanwhile, homestay hosts, aiming to share their local culture, boost income, and efficiently manage their properties, benefit from Homestay Booking System's platform. However, they encounter difficulties in accessing potential guests and marketing their available rooms. Homestay Booking System serves as a bridge connecting these groups, offering a user-friendly interface for seamless interaction and booking experiences. We are new in this field but we will tie up with one or more homestay hosts that will help us penetrate the market.

3.2 Stakeholder summary

Non-user stakeholders

Name	Description	Responsibilities
Payment service providers	These are third-party entities that facilitate payment transactions between users and hosts on the platform.	Payment service providers are responsible for ensuring secure and reliable payment processing, handling financial transactions, and adhering to relevant regulations and standards to protect users' financial information.
System analyst	Analyzes user needs and translates them into technical requirements	Defines system functionalities, data flow, and user workflows
Tester	Reviews technical designs and code for functionality and efficiency	Ensures adherence to coding standards and best practices
Software architect	Designs the overall software architecture	Defines system components, their interactions, and communication protocols

Project manager	Oversees the development process and manages resources	Plans, schedules, and monitors project progress, allocates resources, manages budget
Marketing partners	These are external organizations or individuals involved in promoting the homestay booking platform through various marketing channels.	Marketing partners collaborate with the platform to develop and execute marketing campaigns, increase brand awareness, attract new users and hosts, and drive bookings. They may utilize strategies such as digital advertising, social media marketing, and influencer partnerships to reach target audiences.
Developers	Software engineers responsible for designing, developing, and maintaining the Homestay Booking System platform.	Translate technical requirements into software solutions, design user interfaces and backend systems, test code for functionality and performance, maintain and update the platform to address bugs and implement new features.

3.3 User summary

Guests/Travelers	Primary users seeking homestay accommodation	Search for and book homestays, manage reservations and adhering to booking terms and conditions.
Hosts/Homestay hosts	Secondary users listing their homestay on the platform	List and manage their homestay, receive payments, track bookings, comply with platform policies.

3.4 User environment

Users primarily interact with the platform through a web browser on desktop computers, laptops, or tablets. A stable internet connection is essential for both travelers and homestay hosts to access the platform's functionalities and ensure smooth navigation and booking processes.

3.5 Stakeholder profiles

3.5.1 Travelers

Description	Individuals seeking unique and immersive accommodation experiences.
Type	External, primary users
Responsibilities	<ul style="list-style-type: none"> - Search for homestays based on location, price, amenities, reviews, and personal preferences. - View detailed information and photos of homestays. - Securely book and manage reservations. - Access and manage booking history.

	- Adhere to booking terms
Success criteria	Finding homestays that match their needs, seamless booking experiences, memorable stays, and ensuring their safety and security.
Involvement	Uses the platform to search, book, manage, and review homestays.
Deliverables	None
Comments/ Issues	May require more user-friendly search filters, personalized recommendations, leave reviews and feedback about their homestay experiences and communicate directly with homestay hosts.

3.5.2 Homestay hosts

Description	Individual listing their homestay on the platform to connect with travelers
Type	External, primary users.
Responsibilities	<ul style="list-style-type: none"> - List their homestay with detailed descriptions, photos, and amenities. - Set pricing and availability. - Manage bookings. - Receive secure payments. - Track booking history. - Maintain high standards of hospitality and cleanliness. - Comply with platform policies and local regulations.
Success criteria	The success criteria for homestay hosts include attracting and welcoming guests to their accommodations, increasing occupancy rates to generate income, building a positive reputation as a host, and contributing to the overall success and growth of the platform.
Involvement	Uses the platform to list, manage, and promote their homestay.
Deliverables	None
Comments/ Issues	May require more marketing and promotional tools to reach potential guests, receive reviews and high ratings from guests and communicate directly with guests.

3.5.3 Payment service providers

Description	Companies facilitating secure payment transactions.
Type	External
Responsibilities	<ul style="list-style-type: none"> - Process payments for bookings. - Ensure secure and compliant transactions.

	- Provide customer support for payment issues.
Success criteria	Ensure secure and reliable payment processing, minimizing fraud and financial risks, while also offering a streamlined user experience for payments.
Involvement	Payment gateway integration, security audits and compliance reporting
Deliverables	Payment processing agreements and transaction data.
Comments / Issues	Integration complexity and potential fees associated with payment services.

3.5.4 System analyst

Description	Analyzes user needs and translates them into technical requirements
Type	Internal or Consultant
Responsibilities	<ul style="list-style-type: none"> - Define system requirements for the platform. - Identify potential technical issues and recommend solutions. - Work with stakeholders to ensure requirements meet their needs.
Success criteria	<ul style="list-style-type: none"> - Clear and well-defined technical requirements document - System design that addresses all stakeholder needs and functionalities - Minimal technical challenges during development.
Involvement	High during the initial development phase, defining requirements and system architecture.
Deliverables	System requirements document (SRS).
Comments/ Issues	Needs to effectively communicate technical concepts to non-technical stakeholders.

3.5.5 Tester

Description	Assesses the technical feasibility and soundness of the platform's design and implementation.
Type	Internal or Consultant
Responsibilities	<ul style="list-style-type: none"> - Evaluate technical solutions proposed by developers. - Identify potential technical risks and suggest mitigation strategies. - Provide feedback on code quality and adherence to best practices.

Success criteria	Ensure the platform architecture is well-structured and technically robust, proactively identify and mitigate potential technical risks at early development stages, and produce high-quality code that is both maintainable both expandable.
Involvement	Throughout the development process, providing ongoing technical reviews and feedback.
Deliverables	Technical review reports with recommendations.
Comments/ Issues	Needs to balance technical best practices with business needs and project timelines.

3.5.6 Software architect

Description	Designs the overall software architecture of the platform, defining its structure, components, and interactions.
Type	Internal or Consultant
Responsibilities	<ul style="list-style-type: none"> - Define the system's overall architecture and components. - Ensure the architecture is scalable, maintainable, and secure. - Work with developers to implement the chosen architecture.
Success criteria	<ul style="list-style-type: none"> - A well-defined and documented software architecture. - A platform that is scalable to accommodate future growth and user base. - Easy maintenance and updates to the platform.
Involvement	High during the initial development phase, defining the architecture and working with developers.
Deliverables	Software architecture document and technical specifications.
Comments/ Issues	Needs to consider future needs and potential growth when designing the architecture.

3.5.7 Project manager

Description	Oversees the planning, execution, and delivery of the project within budget, time, and scope.
Type	Internal
Responsibilities	<ul style="list-style-type: none"> - Manage project timeline, resources, and risks. - Ensure clear communication among stakeholders. - Track project progress and address any roadblocks.

Success criteria	Successful launch of the platform on time and within budget, meeting project scope and functionalities as defined in the requirements.
Involvement	Plan and implement projects, resource allocation and management, identify and minimize risks.
Deliverables	Project plans, status reports.
Comments/ Issues	Requires strong leadership, communication, and organizational skills.

3.5.8 Marketing partners

Description	Companies or individuals promoting Homestay Booking System to potential users.
Type	External
Responsibilities	<ul style="list-style-type: none"> - Collaborate on marketing campaigns to attract travelers and homestay hosts. - Generate brand awareness and user acquisition.
Success criteria	Increase user base and platform adoption, target marketing efforts to reach relevant audiences.
Involvement	Participate in marketing initiatives and advertising campaigns, content creation and social media engagement.
Deliverables	Marketing campaign reports and user acquisition data.
Comments/ Issues	Aligning marketing goals and strategies with different partners.

3.5.9 Developers

Description	Software engineers responsible for designing, developing, and maintaining the Homestay Booking System platform.
Type	Internal
Responsibilities	<ul style="list-style-type: none"> - Analyze technical requirements - Design and develop software solutions - Test and debug for smooth functionality - Deploy and maintain the platform - Collaborate effectively - Stay updated with the latest trends.
Success criteria	- Successful platforms launch on time.

	<ul style="list-style-type: none"> - Highly functional and user-friendly platform that meets user needs and expectations. - Minimal bugs and errors ensuring a smooth user experience. - Scalable and maintainable platform that can accommodate future growth. - Efficient development process with clear communication and collaboration.
Involvement	Contribute to project planning, maintain technical documentation, conduct code reviews and unit testing, collaborate on UI/UX development, and participate in deployment and maintenance activities.
Deliverables	Well-tested software code, comprehensive technical documentation, bug reports and fixes, and active participation in code reviews and deployment processes for the Homestay Booking System platform.
Comments/ Issues	Manage tight deadlines while ensuring code quality and security, keep up with evolving technologies, promote clear communication and collaboration, and maintain a user-centric approach throughout the cycle development period.

3.6 Key stakeholder or user needs

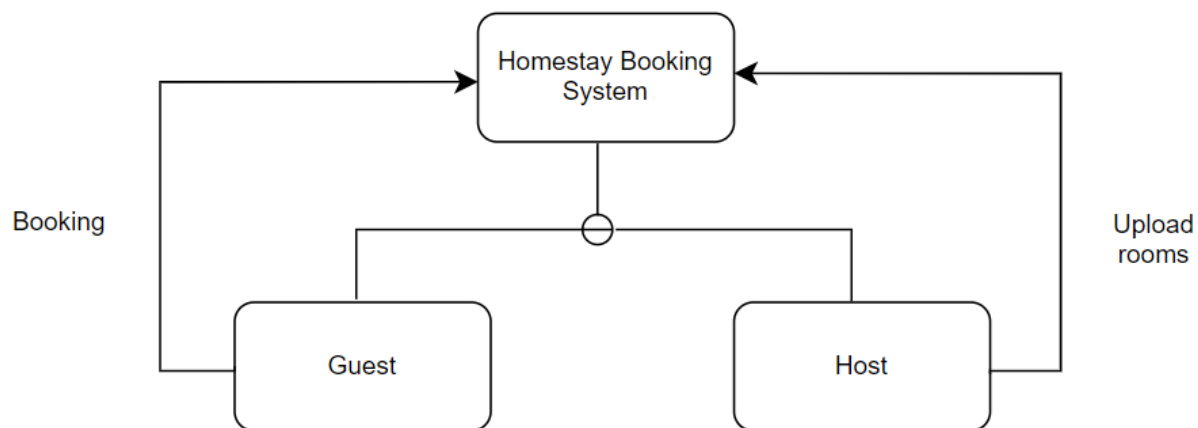
Need	Priority	Concerns	Current Solution	Proposed Solutions
Secured and privacy	High	Protection of personal information and payment security.	Authentication methods and data encryption.	Enhance security measures, provide robust data encryption, and conduct regular security checks to prevent security breaches.
Scalable	Moderate	Handling increasing user load and data volume.	None	Utilizing cloud-based infrastructure, load balancing, and horizontal scaling to accommodate growth without service interruption.
Ease of Use and User-Friendly Interface	High	Simple and convenient user experience.	Simple and user-friendly interface	Design a user-friendly interface with clear and accessible features for ease of use regardless of the wireless device in use
Responsive and quick interaction	Moderate to high	Prompt support and response.	None	Implement support system and fast interaction
Flexible	Moderate	Ability to customize easily.	None	Design a flexible and customizable system to meet changing user and business needs.

Stability and reliability	High	Ability to operate stably and reliably	None	Regular maintenance, use of reliable cloud services, and timely notification to users about any issues or expected downtime.
Diverse selection	Moderate to high	Diversity in options	None	Expand the list of homestays, add more options regarding location, amenities, and pricing to meet users' diverse needs.
Customer support	High	Provide timely and effective support to users when needed.	A support system via email or phone hotline.	Implement an support system within the application, provide FAQs, and establish user feedback mechanisms to improve support services.

4. Product overview

4.1 Product perspective

The Homestay Booking system operates as an independent and self-contained product within the hospitality and travel industry. It interfaces with various components, including frontend technologies like React, backend technologies like Node.js and Express, and a MongoDB database. This platform caters to both travelers seeking unique and immersive accommodation experiences, and homestay hosts looking to list their properties and connect with guests.



4.2 Summary of capabilities

The website will have some basic functions as follows:

- Register an account
- Log in to the website

- Edit account information

Besides, there will be specific functions for each type of user:

a) For guests

- Search and browse homestays.
 - Guests can search for homestays based on location, price range, amenities, and other preferences.
 - They can browse through a comprehensive list of available homestays with detailed information.
- View homestay details: Guests can view detailed information about each homestay, including descriptions, photos, amenities, and user reviews.
- Make bookings: Guests can select their desired homestay, choose room types, specify dates, and make bookings securely through the platform.
- Manage bookings: Guests can view and manage their bookings, including modifying dates, canceling reservations (if allowed), and accessing booking confirmations.
- Search filters and sorting: Guests can use filters and sorting options to refine their search results based on criteria such as price, ratings, and proximity to landmarks.

b) For hosts

- Create and manage homestay listings: Homestay hosts can create, edit, and manage listings for their properties, including adding descriptions, photos, amenities, and pricing details.
- Update availability: Homestay hosts can update the availability of rooms in real-time, ensuring accurate information is displayed to potential guests.
- Manage bookings: Homestay hosts can view and manage their booking lists, including confirming reservations, modifying dates, and processing cancellations.

4.3 Assumptions and dependencies

- Availability of third-party APIs: The SRS assumes the availability and continued support of third-party APIs for functionalities such as payment processing, mapping services, and email communication. Any changes or discontinuation of these APIs may require adjustments to the software requirements.
- Internet connectivity: It is assumed that users will have reliable internet connectivity to access the homestay booking system. Dependence on internet connectivity for system functionality implies that any disruptions or limitations in connectivity may affect the software requirements.
- Scalability requirements: It is assumed that the Homestay Booking System system will need to accommodate a growing user base and increasing transaction volumes over time. Any changes in expected scalability requirements may influence the software requirements related to performance, capacity planning, and system architecture.
- Availability of hosting infrastructure: The SRS assumes the availability of hosting infrastructure for deploying and hosting the Homestay Booking System system, including servers, storage, and network resources. Changes in hosting arrangements or infrastructure limitations may impact the software requirements, particularly in terms of deployment options and scalability.

4.4 Cost and pricing

- Commission fees: Charge a percentage on each booking completed through the platform.
- Transaction fees: Charge a small fee per transaction.
- The specific pricing structure will depend on market research and competitor analysis

4.5 Licensing and installation

- The Homestay Booking System can be offered as a Software-as-a-Service (SaaS) model.
- Users access the platform through a web browser. No software installation is required on the user's end.
- Licensing agreements will be established for homestay hosts outlining platform usage terms and conditions.

5. Product features

5.1 Login

- Allows users to authenticate themselves to access the system.
- Depending on the user account register as a guest or host, when logging in to the system, the correct interface will be displayed according to user's account type.
- If the user account log in to has the wrong email or password, the system will report an error and the user need to re-enter it correctly.
- If any field is missed, the system will warn that that field is required.

5.2 Register

- Register a guest account: Allows users to register a new account to use guest functions.
- Register a host account: Allows users to register a new account to use host functions.
- Different account types will have different interfaces and functions.
- If the account user registered with already exists, the system will report an error saying the account already exists.
- If any field is missed, the system will warn that that field is required.

5.3 Change password

- Allows users to change their current password to another password.
- To change the password, users need to enter the current password, new password and confirm password.
- If the new password is not different from the old password, the system will report an error.
- If any field is missed, the system will warn that that field is required.

5.4 Edit personal details

- Allows users to edit their profile information such as first name, last name.
- Email is fixed and does not change.
- If any field is missed, the system will warn that that field is required.

5.5 Search rooms

- Allows guests to search for available homestay rooms based on specified criteria.
- Guests can search for rooms by location, check-in date, check-out date, number of adults, number of children.

- Users can click the clear button to search for another purpose.

5.6 Filter rooms

- Allows users to filter room search results by criteria such as price, number of stars, room type, amenities.
- Users can click the clear button to search for another purpose.
- Fields are optional.

5.7 View room detail

- Allows users to view detailed room information such as location, number of stars, room photos, description, amenities, and price to be able to make the right choice.
- If users like that homestay room, users can click the book now button to book a room immediately or if users just want to try it out to see the total cost before finalizing the order.

5.8 Book rooms

- Allows guests to book homestay rooms after selecting from available options.
- After pressing the book now button, the booking detail form will appear on the screen with the fees that guests must pay if they want to book this homestay room based on the total number of nights and total number of guests (adults, children). Next to that is a confirmation details form to confirm whether the customer's information is correct, the total amount to pay and a request to enter the card number for payment.
- Guests can pay for homestay reservations with many different cards such as Visa, Mastercard, American Express, Discover, Diners Club, JCB, UnionPay,... online right on the website without having to worry about security issues.

5.9 View bookings

- Allows guests to view a list of booked rooms, including room information, check in/check out dates, and prices.

5.10 View rooms

- Provides hosts with an interface to view their rental listings with functions to add, edit, remove and view guest bookings.

5.11 Add rooms

- Allows hosts to add new rooms, including details such as location, description, room type, price, and amenities.
- In addition, the host needs to upload 4 photos of the homestay room.
- If any field is missed, the system will warn that that field is required.

5.12 Remove rooms

- Allows hosts to remove existing rooms from the system.

5.13 Modify rooms detailed information

- Allows hosts to modify existing room information, including details such as location, description, room type, price and amenities, and can delete old photos and replace them with new photos of that room.

5.14 View guest bookings

- Allows hosts to view a list of reservations made for their rooms with specific guest information such as name, email, check in date, check out date, number of people,...

5.15 View latest destinations

- Allows users to view the latest destinations added by the system's hosts
- Users can view location display, star rating, and price of those locations.
- After pressing the explore more button, the user can view room details.

5.16 Log out

- Allows users to securely log out of their account.

6. Constraints

Constraints for the Homestay Booking system include:

6.1 Regulatory policies

Compliance with data privacy regulations (e.g GDPR) regarding the handling of personal data stored in the MongoDB database and payment card industry standards (PCI DSS) impose constraints on data handling, security measures, and payment processing.

6.2 Hardware limitations

- **Storage space:** The website needs ample storage space to store information about homestays, bookings, user accounts, and other data. Limited storage space can restrict the amount of data that can be stored, potentially affecting the range of homestays available for booking or limiting historical data storage for analytics.
- **Processing power:** The server's processing power is crucial for handling complex operations such as search queries, booking transactions, payment processing, and data analysis. Insufficient processing power can result in slow performance and delays in processing user requests.
- **Scalability:** The website should be designed to scale horizontally or vertically to accommodate growing user demand. Hardware limitations can restrict scalability, making it challenging to expand server capacity or upgrade hardware components to meet increasing traffic demands.

6.3 Interfaces to other applications

Integration with external applications and APIs for functionalities such as mapping services, payment gateways, and email communication introduces constraints related to compatibility, reliability, and data exchange protocols.

6.4 Parallel operation

Requirements for parallel operation, such as simultaneous access by multiple users or processing multiple transactions concurrently, may impose constraints on system scalability, resource allocation, and performance optimization.

6.5 Audit functions

Requirements for auditing user activities, system changes, and transaction logs impose constraints on data logging, storage, and retrieval mechanisms to ensure compliance with audit trail requirements.

6.6 Control functions

Requirements for user access control, permissions management, and authorization mechanisms impose constraints on user authentication, session management, and role-based access control functionalities.

6.7 Higher-order language requirements

The use of React for frontend development, MongoDB for database interactions, and Node.js with Express for backend development imposes constraints on the selection of programming languages, frameworks, and libraries, requiring expertise in JavaScript and related technologies.

6.8 Signal handshake protocols

Requirements for signal handshake protocols, such as XON-XOFF or ACK-NACK, impose constraints on data transmission, error detection, and flow control mechanisms to ensure reliable communication between system components.

6.9 Reliability requirements

Requirements for system reliability, uptime, and fault tolerance impose constraints on system architecture, redundancy measures, and disaster recovery mechanisms to minimize service disruptions and data loss.

6.10 Criticality of the application

Requirements for the criticality of the application, such as mission-critical or non-critical, impose constraints on system design, testing, and deployment strategies to meet performance, availability, and security objectives.

6.11 Safety and security considerations

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Requirements for safety and security, including data encryption, access control, and vulnerability assessments, impose constraints on system architecture, configuration, and operational practices to mitigate risks and protect against unauthorized access or data breaches.