HOMIGO – A FULL-STACK APPLICATION

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ABSTRACT

The growing demand for authentic, affordable, and culturally immersive travel experiences across India has led to the rise of intelligent, user-focused digital platforms. This full-stack stay-booking application is uniquely designed for the Indian market, aiming to connect travelers with meaningful local stays while empowering hosts who offer distinctive accommodations such as heritage homes, homestays, and offbeat retreats. Emphasizing culturally-aware design and sustainable tourism, the platform integrates region-specific features including multilingual support, curated Indian experiences, and flexible booking models to deliver a personalized and inclusive travel experience. Built with a scalable architecture and modern web technologies, the application ensures seamless performance and adaptability as user demand grows. It leverages machine learning to enhance user engagement through smart recommendations, dynamic pricing strategies, and behavior-based personalization. The platform not only simplifies the discovery and reservation of culturally rich stays but also provides tools and analytics to support host empowerment, helping them optimize visibility and occupancy. From UX/UI elements tailored to Indian user behavior to backend systems supporting secure and efficient transactions, every layer of the platform reflects a commitment to relevance, accessibility, and innovation in Indian travel tech. The system addresses the evolving needs of both urban and rural tourism, encouraging travelers to explore lesser-known destinations while supporting local communities. Ultimately, this web application serves as a bridge between culturally conscious travelers and passionate hosts, redefining the booking experience with a focus on personalization, inclusivity, and sustainability within India's diverse travel landscape.

Keyword: *Indian Travel Tech, Full Stack Development, Personalized Booking, Machine Learning, Culturally-Aware Design, Web Application, Sustainable Tourism, Scalable Architecture, Host Empowerment.*

1. INTRODUCTION

In a country as culturally diverse and geographically vast as India, travelers often seek accommodation experiences that go beyond standard hotel stays—ones that immerse them in local traditions, heritage, and everyday life. However, the fragmented nature of the local hospitality market presents challenges in accessing reliable, affordable, and culturally authentic options. Simultaneously, hosts offering unique stays—such as homestays, heritage homes, and offbeat retreats—face difficulties reaching a wider audience due to limited digital infrastructure and inefficient booking systems.To address this gap, we developed a **Customized Indian Stay-Booking Platform**, a full-stack web application tailored specifically to the Indian travel ecosystem.

2. HOMIGO – AI AND FULL STACK APPLICATION

The proposed Homigo is a full-stack web application tailored to the Indian market, designed to bridge this gap by connecting travelers with culturally rich and affordable stays. The platform emphasizes regional relevance, affordability, and trust, creating a seamless experience for both travelers and hosts. Through intuitive design and robust technical architecture, Homigo enhances discovery, booking, and host management—supporting community-driven and sustainable tourism.

2.1 User Interaction Modes

Users can initiate diagnosis using one of the following modes:

● Search and Discovery: Users can search accommodations based on location, type (homestay, heritage, guesthouse), budget, and amenities. Listings include detailed descriptions, photos, pricing, and local experiences.

● Host Management Dashboard: Hosts can create profiles, add listings, manage availability, respond to guest inquiries, and track payments through a dedicated dashboard.

●Two-Way Recommendation System: Both travelers and hosts can rate each other after a stay, encouraging responsible behavior and continuous service improvement.

2.2 Key Features

● Homigo offers heritage homes, homestays, and region-specific stays to ensure travelers connect with the local culture.

● Users can filter listings based on short-term, long-term, and weekend stays—ideal for solo travelers, families, and remote workers.

● Unified platform combining property listings, user recommendation system.

● Built with modern frameworks to ensure fast, mobile-friendly, and user-friendly interaction.

3.METHODOLOGY

The development of the Homigo platform follows a modular full-stack methodology, ensuring a seamless and scalable solution for India's diverse travel market. The frontend is crafted using React.js and Tailwind CSS, focusing on responsiveness, regional accessibility, and user-friendly interaction. The backend, powered by Node.js and TypeScript, handles the core functionalities such as booking management, user authentication, and business logic through well-structured REST APIs. MongoDB is employed as the primary database, with Prisma ORM facilitating efficient and type-safe data operations. A personalized recommendation system analyzes user preferences and ratings to suggest suitable stays, and a two-way feedback system ensures continual improvement and trust. This methodology ensures that Homigo delivers a reliable, secure, and culturally tailored travel experience to both travelers and hosts.

- The room rental,Homigo platform operates through a structured interaction between hosts and visitors, facilitated by a robust technical stack.The system involves two main user roles: Hosts, who list rooms for rent, and Visitors, who search for and book rooms.
- The frontend is developed using ReactJS and styled with Tailwind CSS, offering a smooth and responsive user interface for both listing and browsing rooms.
- The backend is powered by Node.js and TypeScript, handling core functionalities such as user authentication, session management, room data processing, booking operations, and a dual-side recommendation system.
- A MongoDB database stores essential data including user profiles, room listings, booking requests, and transaction records.
- The recommendation engine works on both sides:
  i. On the host side, it provides insights to help maximize room profitability and optimize listings.
  ii. On the visitor side, it suggests rooms based on their preferences, behavior, and historical data.

- Both hosts and visitors have access to a shared market, enabling efficient communication and interaction for room rentals. The platform implements a transparent transaction model, where: Visitors pay a renting fee, along with a 6–12% service fee.Hosts receive the renting fee minus a 3% service fee. This structured and tech-driven approach ensures a user-friendly and efficient room rental experience for both parties.

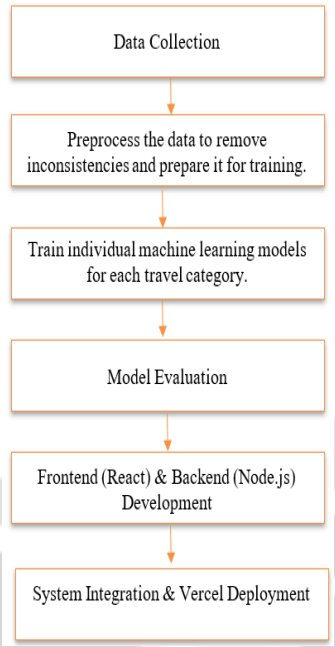

Fig -1: Methodology of Homigo -An Ai and Fullstack application

4. PROPOSED SYSTEM

The Homigo system is structured to offer a comprehensive platform for property recommendations and user engagement, utilizing a full-stack architecture. It is modular in design and It bridges the gap between travelers seeking authentic, affordable accommodations and local hosts offering diverse stay options such as heritage homes, homestays, and offbeat retreats

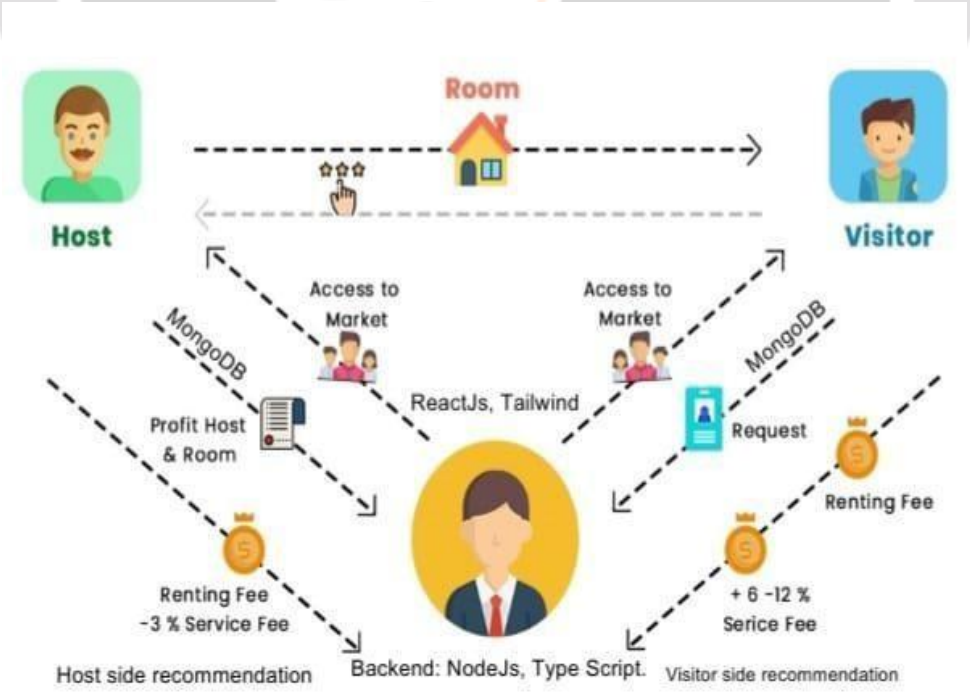

Fig -2: Workflow of Homigo -An Ai and Fullstack application.

System Architecture Overview: The system workflow begins with the user selecting one of the three interaction modules:

- Listing-based Input
- Behavior-based Input
- Hosted on vercel cloud, ensuring fast and scalable performance for frontend delivery.

5. RESULT ANALYSIS

Feature	Description	Accuracy Range
Price	Cost per night	85–92%
Booking as Guest	Booking behavior patterns	80–90%
Two-way Recommendation	Matching guest to host & vice versa	82–89%
Adding Property as Host	Host property listings	78–88%
Location	Accessibility/Demand	75–88%

Table 1:- Result Analysis

6. Conclusion

Homigo exemplifies how full-stack web development can support local tourism ecosystems by connecting demand and supply efficiently. It provides a functional, user-friendly solution for accommodation discovery and booking, specifically adapted to Indian cultural and economic contexts. Through a thoughtful combination of modern web technologies—including **React.js**, **Node.js**, **MongoDB**, and **Google Maps API**—the system ensures a seamless, responsive, and intuitive experience for both users and hosts. Its two-way recommendation and feedback system not only promotes trust and transparency but also empowers hosts to enhance service quality and travelers to make informed decisions.

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