**Dr. D. Y. Patil Unitech Society**
**Dr. D. Y. Patil Institute of Technology**
**Affiliated to Savitribai Phule Pune University, Pune**

**Report on**

# Advance Database Management System Project

# "RentIT"

Submitted in partial fulfilment for the award of degree of

**Bachelor of Engineering**
in
**Information Technology**

Submitted by
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**TIT-37**

Under the guidance of

**Dr. Shubhangi Suryawanshi**

# Dr. D.Y. Patil Institute of Technology, Pimpri,

# Department of Information Technology

## CERTIFICATE

This is to certify that **Kokane Shubham Suresh** from **Third Year Information Technology has** successfully completed his Mini Project in **ADBMS** in the partial fulfilment of the Bachelor's Degree in Engineering.

| | |
|---|---|
| **Dr.Shubhangi Suryawanshi** | **Dr. Lalit Kumar Wadhawa** |
| **Subject Coordinator & HOD** | **Principal** |

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# INTRODUCTION

**RentIT** is a web-based application crafted to revolutionize the accommodation booking experience by providing users with an easy and intuitive platform to discover and book unique, affordable stays. Inspired by the success of platforms like Airbnb, RentIT aims to bridge the gap between travelers seeking personalized lodging options and property owners looking to rent out their spaces. The platform supports both short-term and long-term rentals, catering to a broad range of travelers, including tourists, business professionals, and students.

RentIT focuses on delivering a seamless user experience by integrating advanced web technologies such as Node.js for backend functionality, MongoDB Atlas for efficient data management, and Leaflet for interactive map integration. The platform's intuitive design simplifies the user journey, allowing them to effortlessly search for listings based on location, browse detailed property descriptions, view real-time availability, and securely book accommodations.

For property owners, RentIT offers a robust management system that enables them to create, edit, and showcase their listings with high-quality images and descriptions. The platform's interactive map feature provides users with a clear understanding of property locations, ensuring informed decisions when booking accommodations.

With a commitment to improving user interaction and efficiency, RentIT combines functionality with aesthetics, offering a responsive, visually appealing interface that works across all devices. The platform aspires to set new standards for the travel and rental market, making it easier for users to connect with unique and diverse accommodations while delivering a smooth and secure booking experience.

# PROBLEM STATEMENT

## Objective

The primary objective of **RentIT** is to create an accessible and user-friendly platform that allows travelers to find and book unique, affordable accommodations. The platform aims to simplify the process for both travelers and property owners, ensuring a smooth experience from search to booking. It also seeks to cater to different types of rentals, from short-term vacation stays to long-term accommodations.

## Challenge

The existing accommodation booking platforms often have complex navigation, limited filtering options, and lack seamless integration of location-based search. Moreover, property owners face difficulties in managing their listings and communicating effectively with potential guests. These challenges create friction for users, leading to a time-consuming and often frustrating experience when searching for appropriate accommodations.

## Goal

RentIT aims to address these challenges by developing a streamlined platform that focuses on providing a clean and intuitive user interface, advanced search features, and interactive maps. The goal is to enhance the user experience for both travelers and property owners, offering features like easy listing management, secure bookings, and detailed property viewing, while also incorporating responsive design to accommodate users across different devices.

## Outcome

By solving these challenges, RentIT is expected to create a seamless, efficient platform that not only improves the booking experience for travelers but also offers property owners a convenient way to list and manage their properties. The outcome will be a versatile solution that appeals to a wide audience, including tourists, students, and professionals, while significantly reducing the time and effort required to book accommodations.

# METHODOLOGICAL DETAIL

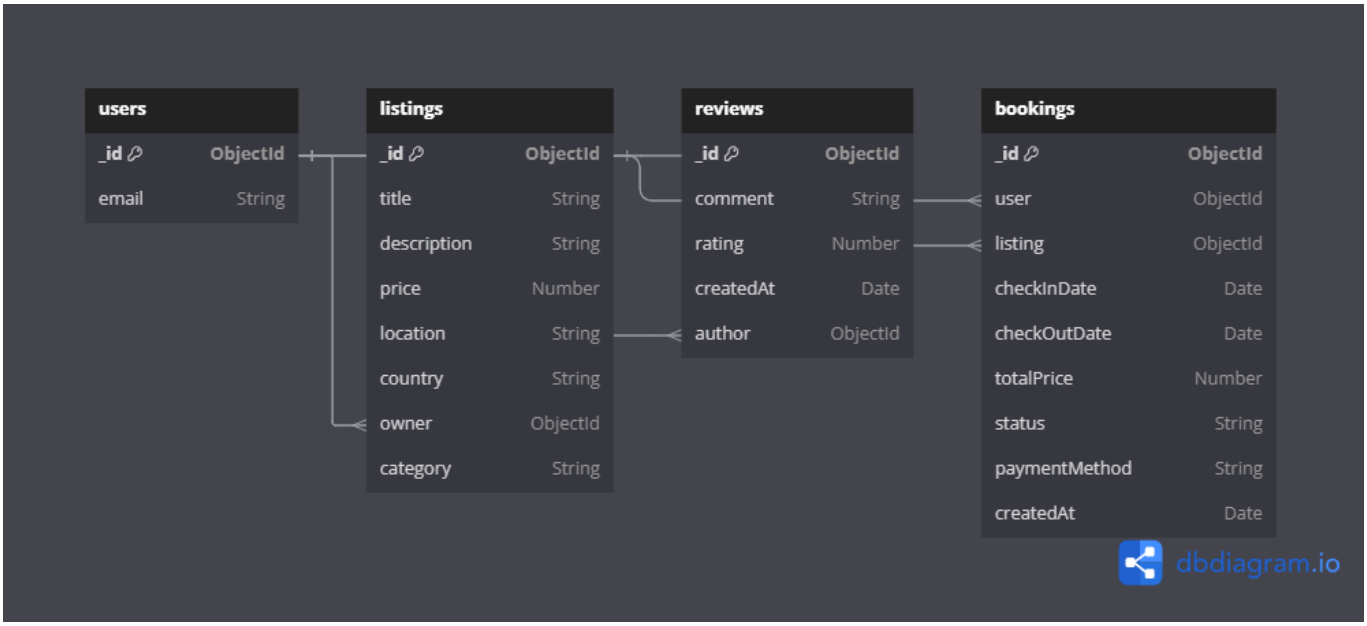
RentIT follows a structured methodology using the Model-View-Controller (MVC) architecture:

- **Model**: Handles the data-related logic of the application. MongoDB Atlas stores all data, including user profiles, listings, and bookings.
- **View**: Represents the user interface. HTML, CSS, Bootstrap, and JavaScript create a responsive and interactive UI for users to interact with listings and maps.
- **Controller**: Manages the interaction between models and views, handling user inputs, routing, and business logic using Node.js and Express.js.

## Workflow:

- Users can sign up, log in, and browse listings.
- Hosts can create, edit, and manage their listings.
- An interactive map shows the location of each listing.
- Secure booking functionality is available for registered users.

# ER Diagram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createdAt Date
author ObjectId
bookings
_id ObjectId
user ObjectId
listing ObjectId
checkInDate Date
checkOutDate Date
totalPrice Number
status String
paymentMethod String
createdAt Date
dbdiagram.io

# TECHNOLOGY USED

**RentIT** leverages a wide range of modern web technologies and packages to create a robust and dynamic web application:

- **Backend**:
  - **Node.js**: JavaScript runtime used for building scalable server-side applications.
  - **Express.js**: Web framework for Node.js used for creating the API and handling server requests.

- **Database**:
  - **MongoDB Atlas**: A cloud-based NoSQL database for efficient data storage and retrieval.
  - **Mongoose**: An ODM (Object Data Modeling) library for MongoDB, used to manage database schemas and data.

- **Frontend**:
  - **HTML/CSS**: Standard web technologies for structuring and styling the user interface.
  - **Bootstrap**: A front-end framework that ensures the application is responsive across devices.
  - **EJS (Embedded JavaScript)**: A templating engine used to render dynamic content on the client-side.

- **Authentication & Authorization**:
  - **Passport.js**: Authentication middleware for managing user sign-up and login sessions.
  - **Passport-local & Passport-local-mongoose**: Used for handling user authentication using local strategy with MongoDB.

- **File Upload & Management**:
  - **Multer**: Middleware for handling multipart/form-data (for file uploads).
  - **Multer-storage-cloudinary**: An integration of Multer and Cloudinary to store images in the cloud.
  - **Cloudinary**: A cloud storage service used for storing and managing media files (images).

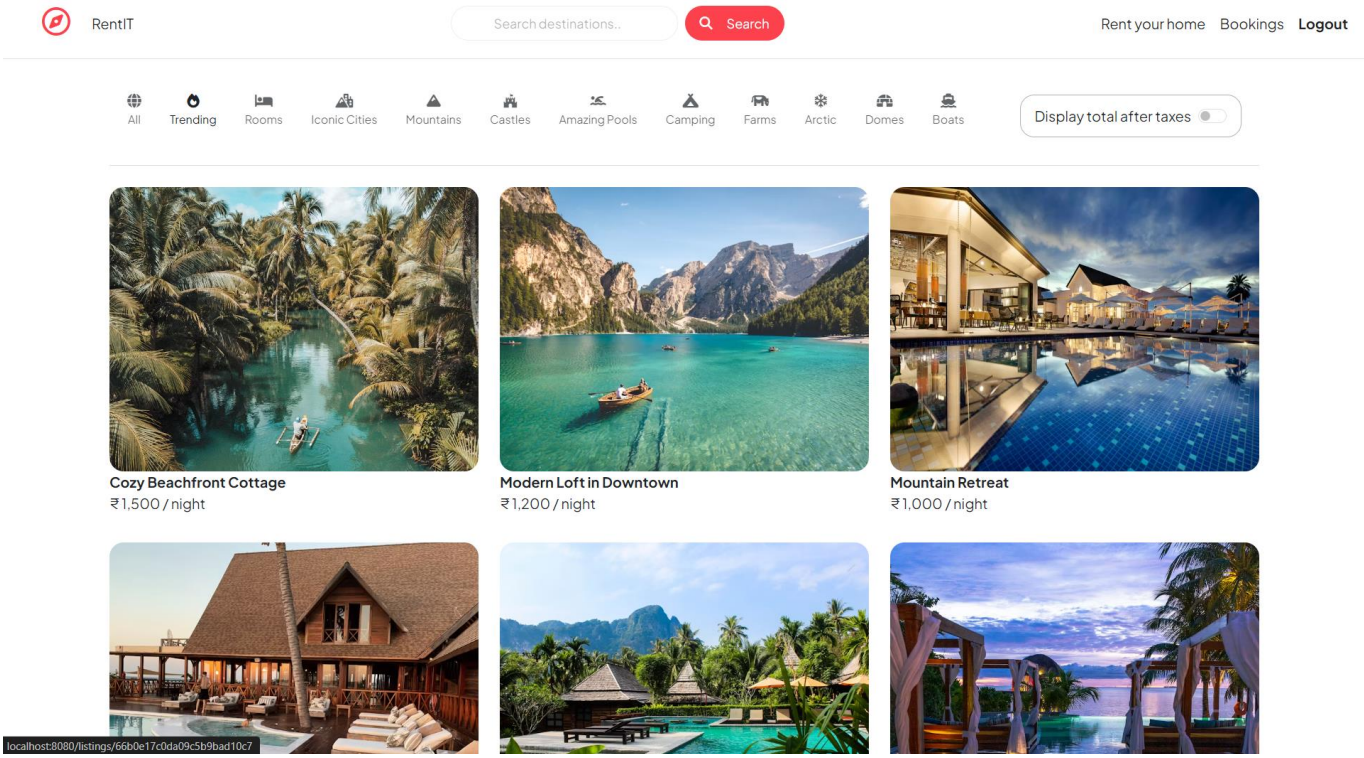
- **Session & Cookies Management**:
  - **Express-session**: Middleware for managing user sessions.
  - **Connect-mongo**: Session storage management for MongoDB.
  - **Connect-redis**: Session management with Redis for better scalability and performance.
  - **Cookie-parser**: Middleware for parsing cookies for better session management.

- **Validation**:
  - **Joi**: A powerful library used for validating user inputs and ensuring data integrity.

- **Environment Variables**:
  - **dotenv**: Used to load environment variables from a `.env` file to keep sensitive information secure.

- **Other Utilities**:
  - **Method-override**: Allows usage of HTTP verbs like PUT and DELETE in places where the client doesn't support it.
  - **Connect-flash**: Middleware for storing and retrieving temporary messages (flash messages).

# RESULTS


RentIT
Search destinations..
Search
Rent your home
Bookings
Logout
All
Trending
Rooms
Iconic Cities
Mountains
Castles
Amazing Pools
Camping
Farms
Arctic
Domes
Boats
Display total after taxes
Cozy Beachfront Cottage
₹1,500 / night
Modern Loft in Downtown
₹1,200 / night
Mountain Retreat
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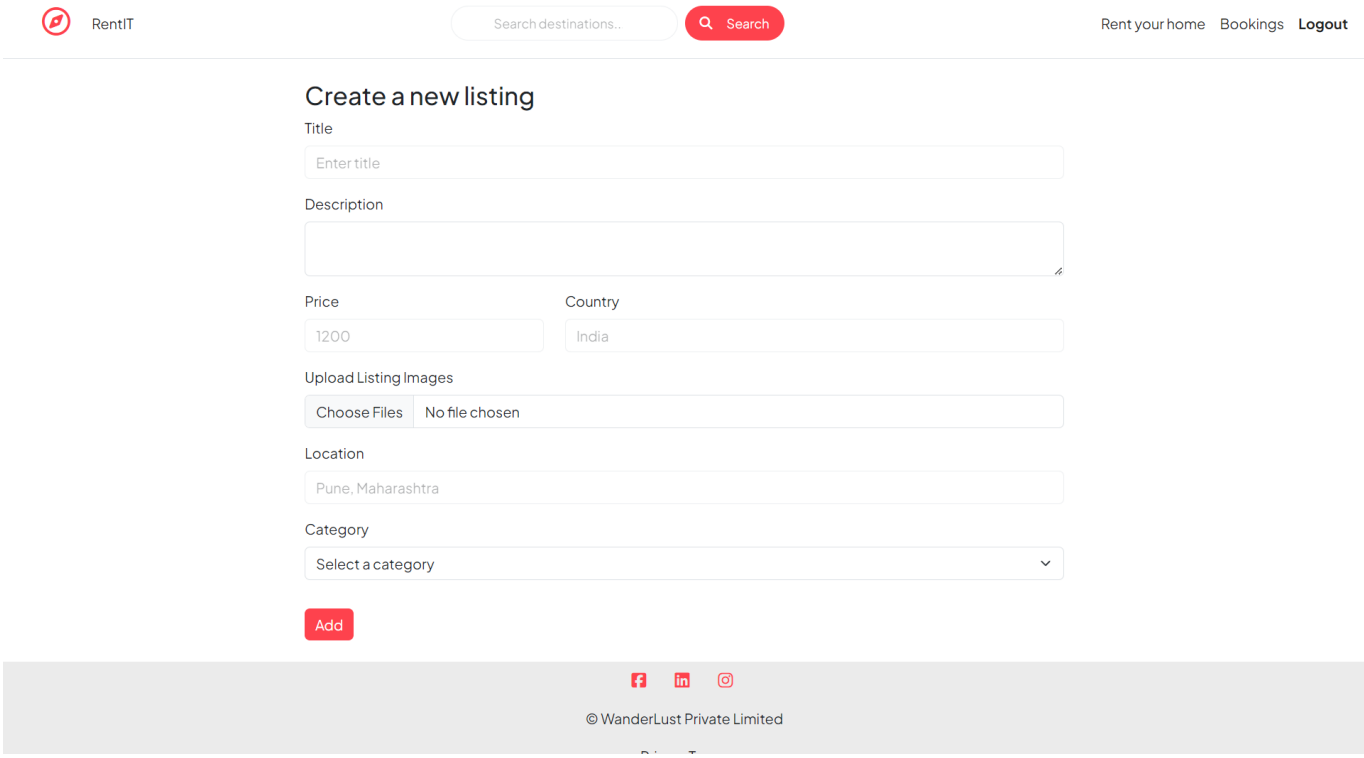
RentIT
Search destinations..
Search
Rent your home
Bookings
Logout
Create a new listing
Title
Enter title
Description
Price
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Upload Listing Images
Choose Files
No file chosen
Location
Pune, Maharashtra
Category
Select a category
Add
© WanderLust Private Limited

RentIT

Search destinations..

Search

Rent your home Bookings **Logout**

# All Bookings

## Booking Details for Cozy Beachfront Cottage

Owned by

| Escape to this charming beachfront cottage for a relaxing getaway. Enjoy stunning ocean views and easy access to the beach.

| ₹4,500

| Malibu

Delete Booking

RentIT

Search destinations..

Search

Rent your home Bookings **Logout**

## Cozy Beachfront Cottage

Owned by ***shubham***

| Escape to this charming beachfront cottage for a relaxing getaway. Enjoy stunning ocean views and easy access to the beach.

| ₹1,500

| Malibu

| United States

Edit Delete Book Now

RentIT

Search destinations..

Search

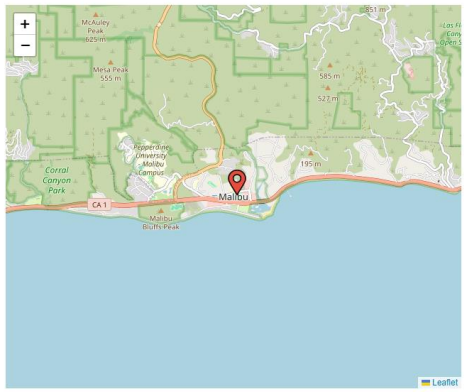
Rent your home Bookings **Logout**

## Leave a review

Rating

Comments

Submit




RentIT

Search destinations..

Search

Rent your home Bookings **Logout**

## Book Your Stay

Check-In Date:

mm/dd/yyyy

Check-Out Date:

mm/dd/yyyy

Payment Method:

Select a payment method

Book Now

# APPLICATIONS

**RentIT** is a versatile platform that can be applied in a variety of real-world scenarios, making it highly adaptable for different business models and user needs:

### 1. Travel Platforms

RentIT serves as a complete, end-to-end solution for accommodation booking, similar to popular platforms like Airbnb. It offers a seamless experience for travelers who are looking for unique, budget-friendly, or luxurious stays. Users can search for accommodations based on location, price, and availability, and securely book their stays through the platform. This makes it ideal for tourists, backpackers, and holiday-goers looking for personalized stays, whether for short vacations or extended trips. The integration of interactive maps allows users to visualize property locations, providing them with a clear idea of nearby attractions and amenities, enhancing the overall travel experience.

### 2. Local Rentals

Beyond traditional vacation bookings, RentIT can be utilized by local residents looking to rent out rooms or entire properties on a short- or long-term basis. This feature is particularly useful for students, professionals, or people temporarily relocating, offering them an easy way to find affordable housing without resorting to long-term rental contracts. RentIT allows local hosts to list their properties with detailed descriptions and images, giving renters a clear understanding of what they can expect. With an easy-to-manage interface, property owners can update availability, adjust pricing, and communicate with potential renters, making it a valuable tool for peer-to-peer rentals in local communities.

### 3. Business Model Expansion

RentIT is designed to scale beyond just accommodation bookings. The platform can be expanded to include additional services such as:

- **Hosting Experiences**: Just like platforms that offer guided tours or local activities, RentIT can allow hosts to list unique experiences, such as cooking classes, adventure sports, or guided city tours. This would offer travelers a way to book both their stay and experiences in one place, enhancing convenience.

- **Event Space Rentals**: RentIT can be adapted to support the rental of spaces for events such as conferences, weddings, or corporate retreats. Business professionals or event organizers can search for and book unique venues through the platform.
- **Co-Working Spaces**: As remote work becomes more prevalent, RentIT can include listings for co-working spaces, giving professionals the option to book workspaces while traveling or in their local area.

By incorporating these additional services, RentIT could transition from being just a travel booking platform into a comprehensive marketplace for accommodations, experiences, and event spaces, offering diverse revenue streams for hosts and expanding its user base.

# CONCLUSION

**RentIT** serves as a functional and visually appealing web platform that significantly simplifies the process of booking travel accommodations. With its intuitive, user-friendly design, it offers a seamless experience for both travelers and property owners. The integration of interactive maps provides a more engaging way to explore listings, while the streamlined booking process reduces the friction often associated with traditional platforms.

By focusing on a clean interface,  advanced features like user authentication and secure payment options, RentIT addresses many of the common pain points travelers encounter, such as complicated search filters, unclear location details, and cumbersome booking procedures. Property owners also benefit from easy management of listings and bookings, enhancing their experience as well.

The flexibility of **RentIT** opens the door to numerous future possibilities, including expanding into local rentals, co-working spaces, and hosting experiences. As a scalable platform, RentIT is poised to grow beyond a simple accommodation booking system into a comprehensive travel and event marketplace, meeting the evolving needs of modern travelers and hosts.

In conclusion, **RentIT** not only solves the immediate challenges of booking accommodations but also provides a foundation for future growth and innovation in the travel industry.

# FUTURE SCOPE

**RentIT** has the potential for further development:

- **Mobile App Development**: Extend the platform to Android and iOS.
- **Advanced Search Features**: Filters for better search results based on price range, availability, and preferences.
- **Recommendations**: Personalization based on user preferences and previous bookings.
- **Payment Integration**: Adding support for multiple payment gateways and currencies.
- **Ratings & Reviews**: Implementing a review system for both hosts and guests.

# References

**References**


1. MongoDB Atlas Documentation
   https://docs.atlas.mongodb.com
2. Node.js Official Documentation
   https://nodejs.org/en/docs
3. Express.js Official Documentation
   https://expressjs.com/en/starter/installing.html
4. Leaflet.js Documentation
   https://leafletjs.com/reference.html
5. Bootstrap Official Documentation
   https://getbootstrap.com/docs/5.0/getting-started/introduction
6. Cloudinary Documentation
   https://cloudinary.com/documentation
7. Multer Documentation
   https://github.com/expressjs/multer
8. Joi Validation Documentation
   https://joi.dev/api
9. Passport.js Documentation
   http://www.passportjs.org/docs
10. dotenv Documentation
    https://www.npmjs.com/package/dotenv

## Source Code and Required Files link / GitHub Link

https://github.com/S2hubham/RentIT

## Output Video Link

https://youtu.be/AJUk7xxqtBQ