

HOTEL BOOKING SYSTEM

Functional Requirement:

- The system shall allow users (guests and admins) to register and sign in.
- The system shall allow guests to search for available rooms by date and type.
- The system shall allow guests to book rooms.
- The system shall allow guests to cancel or modify bookings before the check-in date.
- The system shall allow guests to make secure online payments for bookings.
- The system shall allow users to view their current and past bookings.
- The system shall allow administrators to view all bookings, users, and payments.
- The system shall store user data include name, email, phone number, and role.
- The system shall store room data including room number, type, capacity, price per night, and description.
- The system shall store booking information including check-in date, check-out date, booking status, and total price.
- The system shall store payment details including amount, date, payment method, and status.
- The system shall support sending notifications (confirmation, cancellation, etc.) to users.
- The system shall ensure each booking has one unique reference number.
- The system shall prevent double booking of rooms.
- The system shall restrict users with unpaid balances from making new bookings.

Non-Functional Requirement:

- The system shall be accessible via major modern web browsers (Chrome, Firefox, Edge, Safari).
- The system shall handle concurrent bookings and user sessions without data inconsistency.
- The system shall provide responses to user actions within 2 seconds under normal conditions.
- The system shall secure all sensitive user and payment information using encryption.
- The system shall be scalable to support multiple hotel branches and hundreds of users simultaneously.

- The system shall be available 24/7 with 99.999% availability.
- The system shall follow responsive design principles for access on both desktop and mobile devices.
- The system shall log all user actions and payment transactions for audit purposes.
- The system shall restrict access based on user roles (guest, admin).
- The system shall allow easy maintenance and future upgrades via modular architecture.

UML Class Diagram

