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Institute of Information and Communication Technology

IT314 – Software Engineering
GROUP – 9

FUNCTIONAL/NON FUNCTIONAL
REQUIREMENT



STAYEASY – HOTEL BOOKING SYSTEM

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Functional Requirements :

1. Authentication (Login/Logout)

- The system must allow customers, managers, and admins to log in securely using valid credentials (username/email and password).
- The system must validate credentials and redirect users to their respective dashboards upon successful login.
- If authentication fails, the system must display an appropriate error message.
- The system must securely log users out, ending their session and invalidating the authentication token.

2. Account Registration

- The system must allow customers to create an account by providing personal details (e.g., name, email, and password).
- The system must validate the email for uniqueness and ensure the password meets security requirements (e.g., minimum length, complexity).

3. Password Management

- The system must provide a "Forgot Password" feature to allow users to reset their password.
- Users must be able to request a password reset by entering their email address.
- The system must send password reset instructions via email with a secure link.

4. Profile Management

- Users must be able to update their personal profile information (e.g., name, email, phone number) from their account page.
- The system must validate new information (e.g., email format) and require the current password to save changes.

- Users must be able to view their profile details and booking history.

5. Hotel Search

- The system must allow users to search for hotels based on location, check-in/check-out dates, and room availability.
- Search results must display hotel names, ratings, prices, and brief descriptions.
- Users must be able to filter search results by price range, rating.
- The system must update search results dynamically based on applied filters.

6. Hotel Details and Policies

- The system must provide detailed information about a hotel, including room types, amenities, photos, pricing, and policies (e.g., check-in/check-out times and cancellation terms).
- Users must be able to view reviews and ratings for hotels without logging in.
- The system must prompt users to log in to proceed with booking or leaving a review.

7. Room Booking and Availability

- The system must allow users to book available hotel rooms by specifying their stay duration and selecting a room type.
- The system must validate room availability and provide a total cost breakdown, including taxes and fees.
- Upon successful booking, the system must send a confirmation email with booking details.

8. Payment Processing

- The system must securely process payments using multiple payment options (credit card, debit card, UPI, net banking).
- The payment page must allow users to apply discount codes and update the total amount dynamically.
- The system must confirm successful transactions and send an email receipt to the user.

9. Booking Management

- Users must be able to view, modify, or cancel their bookings from their account dashboard.
- The system must enforce cancellation policies, including fees or deadlines, before processing cancellations.

10. Reviews and Ratings

- Users must be able to leave reviews and ratings for hotels after their stay, including comments, photos, and videos.
- The system must prompt users to rate the hotel on various aspects such as cleanliness, service, and amenities.

11. Promotions and Special Offers

- The system must display a dedicated page for current promotions and discount offers.
- Customers must be able to view offers without logging in, but the system must prompt login/registration for redemption.

12. Manager Features

- The manager must be able to log in with hotel credentials and access the management dashboard.
- The system must allow managers to:
 - View and analyze hotel analytics (e.g., occupancy rates, revenue, customer satisfaction).
 - Change the number of total rooms.
 - Adjust room prices dynamically based on market demand or seasonality.
 - View detailed booking histories with filtering options.

13. Admin Features

- The admin must be able to add or remove hotels from the system by entering or removing hotel details.
- The system must generate a unique hotel ID for each new hotel added.
- The admin must be able to search and filter the list of hotels by criteria such as name, location, and rating.

14. Secure Payment System

- The system must encrypt payment details and use secure payment gateways for all transactions.
- The system must ensure that transactions are validated and processed efficiently.

15. Notification and Communication

- The system must send automated emails for key actions, including:
 - Account registration confirmation.
 - Booking confirmations and cancellations.
 - Password reset instructions.

Non-Functional Requirements

1. Performance

- The system must load search results for hotels within 2 seconds of query submission under normal conditions.
- The system must handle up to 1000 concurrent users performing searches, bookings, and account activities without significant performance degradation.
- Payment processing must complete within 5 seconds of initiating a transaction.

2. Scalability

- The system must be scalable to accommodate a growing number of hotels, users, and bookings without performance issues.
- The infrastructure must support the addition of new features or services without requiring a complete overhaul of existing systems.

3. Availability

- The system must ensure an uptime of 99.9%, providing uninterrupted service for users to search, book, and manage hotel bookings.
- The system must handle sudden traffic spikes, such as during holiday seasons or promotional campaigns.

4. Security

- All user data, including personal details, payment information, and booking history, must be encrypted in transit (using SSL/TLS) and at rest.
- The system must implement robust authentication mechanisms, including protection against brute force and unauthorized access attempts.
- Payment transactions must comply with PCI DSS (Payment Card Industry Data Security Standard).

5. Data Integrity

- The system must ensure accurate and consistent data synchronization for room availability and booking statuses across all interfaces.
- Booking, cancellation, and payment data must be logged securely and backed up regularly to prevent data loss.

6. Usability

- The system must provide a clean and user-friendly interface that allows users to search, filter, and book hotels effortlessly.
- Key functionalities, such as booking cancellation and payment, must be easily accessible and require minimal steps to complete.

7. Reliability

- The system must ensure that all booking and payment operations are executed accurately, even under high load conditions.

8. Maintainability

- The system must be designed for easy updates and patching to address bugs, performance enhancements, and new feature rollouts.
- Documentation must be maintained to assist with troubleshooting and onboarding of new developers or administrators.