## **Functional Requirement**

* User of this system:

1. Guests
2. Housekeeping Staff
3. Managers
4. Administrators
5. **Functional Requirement for Guests :-**
6. Guest Registration and Login

* The system shall allow guests to register and create an account using their personal details (name, email, phone number, etc.).
* Once registered, guests shall be able to log in using their credentials (username/email and password).

1. Room Reservation

* The system shall provide guests with the ability to search for available rooms based on check-in and check-out dates, room type.
* Guests shall be able to select a room and make a reservation by providing necessary details and payment information.

1. Reservation Handling:

* The system shall allow guests to view, modify, or cancel their reservations. Guests shall be able to see the details of their upcoming, current, and past reservations.

1. Online Payment

* The system shall enable guests to make online payments for their reservations using various payment methods such as credit/debit cards, PayPal, and other online payment gateways.

1. Special Requests and Preferences

* The system shall allow guests to specify special requests and preferences (e.g., extra bed, late check-in, dietary requirements) during the reservation process.

1. Check-In and Check-Out

* The system shall enable guests to check in online prior to arrival and check out online before departure. This includes verifying their identity, selecting additional services, and confirming their stay.

1. Feedback and Reviews

* The system shall allow guests to provide feedback and reviews about their stay. This feedback can include ratings, comments, and suggestions for improvement.

1. Profile Handling

* The system shall allow guests to update their profile information, including personal details, changing passwords, and setting communication preferences.

1. Notifications

* The system shall send notifications to guests for important events such as reservation confirmations, reminders for check-in/check-out, service request updates, and promotional offers.

10) Booking History

* The system shall provide guests with access to their booking history, including details of past stays, payments made, and services availed.

11) Multi-language Support

* The system shall support multiple languages, allowing guests to select their preferred language for navigating the system and receiving notifications.

12)Travel and Transportation Services

* The system shall allow guests to book travel and transportation services, including airport transfers, car rentals, and shuttle services.

13) Room Upgrades

* The system shall offer guests the option to upgrade their rooms based on availability. Guests shall be able to view available upgrade options, costs, and make the upgrade request.

1. **Functional Requirement for Housekeeping Staff :-**
2. View Room Status:

* The system shall allow housekeeping staff to view the current status of all rooms (e.g., Occupied, Vacant, Needs Cleaning, Cleaned, Under Maintenance).

1. Update Room Cleaning Status:

* The system shall enable housekeeping staff to update the status of a room after cleaning it. Possible statuses include "Needs Cleaning," "In Progress," and "Cleaned."

1. Access Control:

* Housekeeping staff shall have access only to the functionalities related to their role. They should not have access to financial reports, guest personal information (beyond room number and status), or other administrative functions.

1. Shift Scheduling:

* The system shall allow the creation and assignment of shifts to housekeeping staff, including start and end times.

1. Shift Swap Requests:

* The system shall allow housekeeping staff to request shift swaps with other staff members, subject to supervisor approval.

1. Attendance Tracking:

* The system shall track attendance and punctuality of housekeeping staff , logging clock-in and clock-out times.

1. Mark Rooms "Do Not Disturb":

* Housekeeping can mark a room as "Do Not Disturb" if the guest has requested privacy.

1. Daily Task Assignment:

* The system shall provide a daily list of rooms assigned for cleaning to each housekeeping staff member. The list should be sortable by priority, room type, or location.

1. Request Supplies:

* The system shall allow housekeeping staff to request additional supplies directly from the system, specifying quantities and types of supplies needed.

10) Emergency Alerts:

* The system shall allow housekeeping staff to trigger emergency alerts in case of a significant issue (e.g., fire, medical emergency).

11)Log Found Items:

* The system shall allow housekeeping staff to log details of any items found in rooms, including a description, location found, and date.

1. **Functional Requirement for Managers :-**
2. Access Financial Reports:

* The system shall provide managers with access to various financial reports, including revenue, expenses, and profit/loss statements.

1. Oversee Budgets:

* The system shall allow administrators to establish and oversee budgets for different departments within the hotel.

1. Monitor Transactions:

* The system shall enable managers to monitor all financial transactions, including guest payments, refunds, and vendor payments.

1. View Reservation Status:

* The system shall allow managers to view the current status of all reservations, including confirmed, pending, and canceled bookings.

1. Track Staff Performance Metrics:

* The system shall track key performance metrics for staff, such as task completion times, guest feedback, and attendance records.

1. Set Performance Goals:

* The system shall allow managers to set performance goals and targets for staff and track progress towards these goals.

1. View Guest Feedback:

* The system shall provide managers with access to guest feedback and reviews from various channels, including surveys, online reviews, and direct feedback.

1. Respond to Guest Feedback:

* The system shall allow managers to respond to guest feedback directly within the system, including the ability to send follow-up messages.

1. Analyze Guest Satisfaction Trends:

* The system shall analyze guest feedback data to identify trends and areas for improvement in guest satisfaction.

10) Build and Maintain Supplier Partnerships:

* The system shall allow managers to oversee supplier information, track orders, and handle reorders to ensure continuous supply.

1. **Functional Requirement for Administrators:-**
2. Maintain Room Inventory and Pricing:

* The system shall allow administrators to define room types, set pricing structures, and configure seasonal and promotional rates.

1. Set Up Hotel Information:

* The system shall enable administrators to input and update hotel information, such as name, address, contact details, and amenities offered.

1. Generate System Usage Reports:

* The system shall allow administrators to generate reports on system usage, including user activity, system performance, and access logs.

1. Analyze Security Reports:

* The system shall provide tools for administrators to analyze security reports, including login attempts, access violations, and data breaches.

1. Develop Disaster Recovery Plans:

* The system shall enable administrators to develop and document disaster recovery plans, including steps for data recovery and system restoration.

1. Implement Load Balancing:

* The system shall support load balancing to distribute workloads evenly across servers, ensuring optimal performance.

1. Oversee Multiple Properties:

* The system shall allow administrators to oversee multiple hotel properties, each with its own settings, users, and data.

1. Perform Regular Backups:

* The system shall perform regular backups of critical data and configurations, storing backups securely.

10) Standardize Policies and Procedures:

* The system shall allow administrators to standardize policies and procedures across multiple properties while allowing for local customization.

11) Monitor Cross-Property Operations:

* The system shall provide tools to monitor and oversee cross-property operations, such as guest transfers, loyalty programs, and resource sharing.

## **Non-Functional Requirement**

1. Response Time:

* Normal Load: Under typical usage conditions, the system should respond to user actions (e.g., booking a room, checking in/out) within 2 seconds.
* Peak Load: During peak usage periods (e.g., during a large event or holiday season), response time should not exceed 5 seconds for any transaction.

1. Throughput:

* The system must support the processing of up to 1,000 transactions per minute without any performance degradation.

1. Concurrent Users:

* The system should handle up to 500 simultaneous active users (staff and guests) performing various operations without any noticeable slowdown or interruption.

1. Data Processing:

* Real-time data processing and updating must occur within 1 second after any change (e.g., room availability status, booking confirmation).

1. Scalability:

* The system architecture must support horizontal and vertical scaling to accommodate increasing numbers of users and data volume without requiring significant downtime or architectural changes.

1. Load Testing:

* The system must undergo regular load testing to ensure it can handle expected user loads and identify any potential performance bottlenecks. Load testing should simulate peak usage conditions and stress scenarios.

1. Security:

* User data must be encrypted in transit and at rest using industry-standard encryption protocols.
* The system should have role-based access control to ensure that only authorized users can access specific features and data.

1. Reliability:

* The system should have an uptime of 99.9% to ensure continuous availability for users.
* Data backups should be performed daily, with a retention period of 30 days.
* In case of system failure, the recovery time should be under 30 minutes.

1. Maintainability:

* The codebase should follow standard coding conventions and be well-documented to facilitate ease of maintenance.
* The system should be modular to allow for easy updates and enhancements.

10. Compatibility:

* The system should be compatible with major web browsers (e.g., Chrome, Firefox, Safari, Edge).

It should support integration with third-party systems such as payment gateways, CRM software, and booking engines.