1. Customers (*customer\_id, name, email, phone, address*)
2. Role (*RoleID, RoleName, Description*)
3. Staff (*staff\_id, name, role, email, phone, RoleID*)
4. Service (*serviceTypeID, ServiceName, Description*)
5. Role\_Service (*RoleID, serviceTypeID, Remarks*)
6. Customer\_Service (*customer\_id, serviceTypeID, request\_date, remarks*)
7. RoomType (*room\_type\_id, type\_name, price\_per*)
8. Rooms (room*\_id, room\_number, room\_type\_id, floor, status* ('Available', 'Occupied', 'Maintenance', 'Cleaning'))
9. Bookings (*booking\_id, customer\_id, room\_id, staff\_id, check\_in\_date, check\_out\_date, booking\_status* ('Checked-Out', 'Checked-In', 'Booked', 'Cancelled', 'Completed')
10. Payment (*payment\_id, booking\_id, amount, payment\_date, payment\_method* ('Card', 'UPI', 'Cash', 'Online')

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| 1. List all available rooms. |
| * select \* from rooms where status = 'Available'; |
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| 1. Show all room numbers and types on the 3rd floor. |
| * select room\_number, type\_name from rooms, roomtype where rooms.room\_type\_id = roomtype.room\_type\_id; |
|  |
| 1. Find the total number of rooms per type (Standard, Deluxe, Suite). |
| * select type\_name, count(\*) from rooms, roomtype where rooms.room\_type\_id = roomtype.room\_type\_id group by type\_name; |
|  |
| 1. Display the count of rooms that are currently Occupied. |
| * select count(room\_number) from rooms where status = 'Occupied'; |
|  |
| 1. Show all Suite rooms which are under Maintenance. |
| * select \* from rooms, roomtype where rooms.room\_type\_id = roomtype.room\_type\_id and rooms.status='Maintenance' and roomtype.type\_name = 'Suite'; |
|  |
| 1. List all customers with their room number, type, and floor. |
| * select c.customer\_id, c.name, c.address, r.room\_number, rt.type\_name, r.floor from customers c, rooms r, roomtype rt, bookings b where c.customer\_id = b.customer\_id and b.room\_id = r.room\_id and rt.room\_type\_id = r.room\_type\_id order by 1; |
|  |
| 1. Find customers who are staying in rooms that are Occupied. |
| * select c.customer\_id, c.name, r.status from customers c, bookings b, rooms r where c. customer\_id = b.customer\_id and b.room\_id = r.room\_id and r. status = 'Occupied' order by c.customer\_id; |
|  |
| 1. Show all Deluxe rooms with the student IDs assigned to them. |
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| 1. List customers along with their room status (Available, Occupied, Maintenance). |
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| 1. Display the customers IDs who are staying on the 2nd floor. |
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| 1. Find customers who stayed in the same room more than once. |
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| 1. List all rooms that have never been assigned to any customer. |
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| 1. Show customer IDs of those who have stayed in both Standard and Deluxe rooms. |
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| 1. Find the maximum duration (in days) of stay by any customer. |
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| 1. Display the rooms assigned most frequently. |
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| 1. For each room type, find how many unique customers stayed in it. |
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| 1. Find customers with overlapping stays (same room, overlapping dates). |
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| 1. List all customers who are currently staying in the hotel (today between startDate and endDate). |
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| 1. Show the average stay duration per room type. |
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| 1. Find the student who changed rooms the most times. |
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| 1. Show the total number of rooms on each floor. |
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| 1. Find the room type with the maximum number of Available rooms. |
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| 1. Display the percentage of rooms that are Occupied, Available, and Maintenance. |
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| 1. List the floor that has the most Suite rooms. |
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| 1. Find the average stay duration per floor. |
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| 1. Find customers who have always stayed in the same type of room. |
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| 1. Show rooms where the latest endDate of assignment is before 2025-07-01 (rooms free after July). |
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| 1. Find the student(s) with the longest continuous stay across all rooms. |
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| 1. List customers who have stayed in rooms that are currently marked Available (past vs present check). |
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| 1. Find customers who stayed in a room that was under Maintenance at some point. |
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| 1. Show customers who stayed in the hotel during March 2025. |
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| 1. Find customers who checked in before April 2025 and checked out after June 2025. |
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| 1. List rooms that were occupied for more than 6 months in total. |
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| 1. Show all stays that overlap with studentID 1005’s stay. |
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| 1. Find customers who have future bookings (endDate > CURRENT\_DATE). |
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| 1. Rank rooms by the number of times they were assigned. |
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| 1. Find the most popular room type based on total student stays. |
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| 1. For each student, find the earliest assigned room and latest assigned room. |
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| 1. Show customers who moved from a Standard room to a Suite room. |
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| 1. List the rooms that have been continuously occupied without a gap between bookings. |
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| 1. List the rooms that changed status the most times (e.g., Available → Occupied → Maintenance). |
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| 1. Show rooms that are currently Available but were Occupied in the past. |
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| 1. Find the average number of Available rooms per floor. |
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| 1. Identify the floor with the highest occupancy rate. |
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| 1. Display the rooms that went directly from Occupied to Maintenance without becoming Available. |
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| 1. Assign each staff member to equal number of rooms (if possible). |
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| 1. Show the staff member who manages the maximum number of rooms. |
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| 1. List all rooms and the staff assigned to them. |
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| 1. Find staff members who manage only Suite rooms. |
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| 1. Show staff who manage rooms that are under Maintenance. |
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| 1. Find customers who have stayed in 3 or more different rooms. |
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| 1. Show the total number of nights spent by each customer. |
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| 1. List customers who extended their stay (overlapping or continuous bookings). |
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| 1. Show customers who checked out and checked in on the same day (room switchers). |
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| 1. Find the customer who had the shortest stay duration. |
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| 1. Find the most frequently occupied room number. |
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| 1. For each room type, calculate the average occupancy duration. |
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| 1. Show the room type with the highest occupancy ratio. |
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| 1. Find the peak months when most rooms were occupied. |
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| 1. List the top 3 customers by total stay duration. |
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| 1. Show customers who stayed in a room on one floor and then moved to a different floor. |
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| 1. Find the rooms that were never empty for more than 15 days between bookings. |
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| 1. Show the average gap between two consecutive stays in each room. |
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| 1. Find customers who always booked the same room number whenever they stayed. |
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| 1. Show the room utilization percentage = (days occupied ÷ total days in the dataset) × 100. |
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| 1. Find customers who moved from Standard → Deluxe → Suite (progressive upgrade). |
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| 1. Show all customers currently staying with their expected checkout date. |
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| 1. Find rooms that have been continuously in Maintenance since the beginning of 2025. |
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| 1. Show the most loyal customers (highest total days stayed across bookings). |
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