Revolutionizing Hotel Booking:
A Smart Database System

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<u>Introduction</u>

The hospitality industry thrives on guest satisfaction, operational efficiency, and seamless service. However, without the right system, managing reservations, payments, and guest preferences efficiently can be challenging.

This article introduces a Hotel Booking System designed to:
- ✅ Automate reservations, payments, and guest management.
- ✅ Provide a customized guest experience.
- ✅ Ensure data security and operational efficiency.

Missions & Objectives

🎯 Mission Statement

"To create unforgettable guest experiences through personalized service, luxurious accommodations, and sustainable hospitality practices."

🌟 Objectives:

- Enhance Guest Satisfaction with seamless booking.

- Employee Development through structured staff management.

- Optimize Operations with efficient reservations, payments, and feedback management.

This system focuses on innovation, sustainability, and automation to revolutionize hotel operations.

Key Features Of the System

📌 **Smart Reservation & Guest Management**

- Guests can book rooms in real time.

- Each guest can have multiple reservations.

- Seamless check-in/check-out experience.

📌 **Secure Payment & Transactions**

- Each reservation links to multiple payments.

- Real-time transaction tracking for guests and admins.

📌 **Room & Service Customization**

- Guests can personalize their stay (room type, amenities, dining preferences).

- Integration with food & beverage services.

📌 **Feedback & Service Improvement**

- Guests can submit multiple feedback entries.

- Hotels can analyze trends and improve services accordingly.
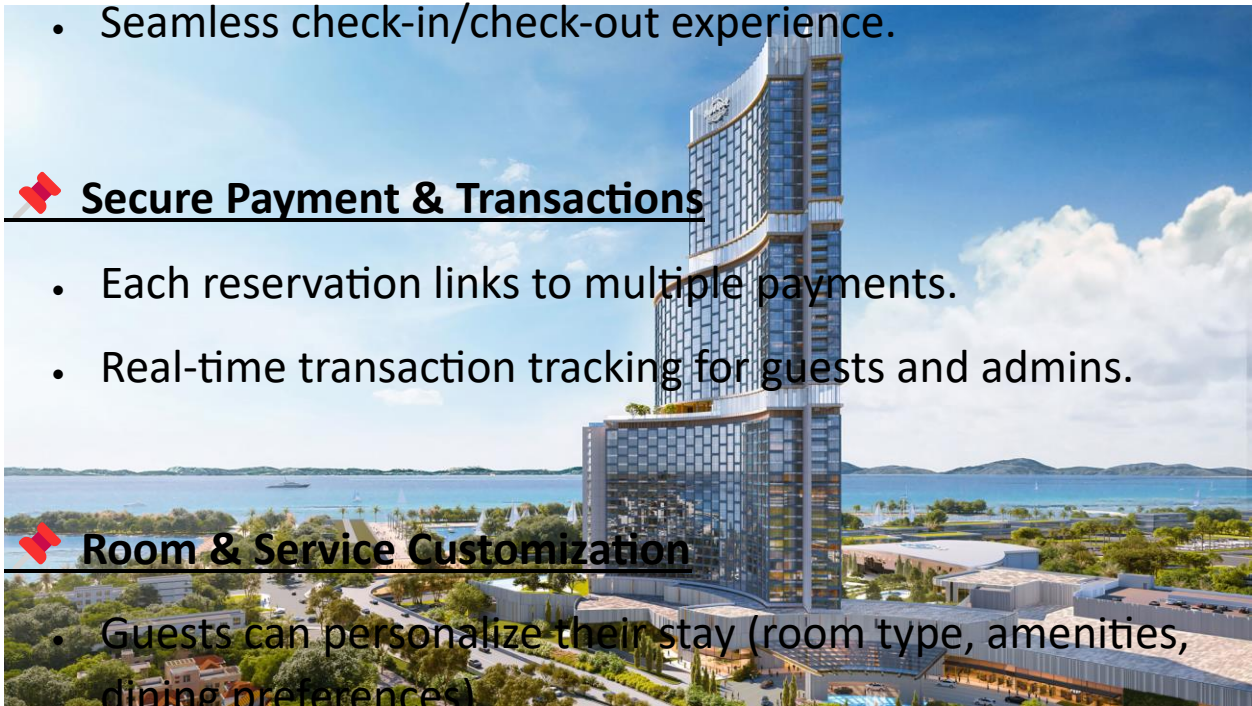
Database Structure & Entity Relationships

This system uses MySQL to manage data efficiently. Below are the main tables:

📊 Core Tables in the Database

Table Name	Purpose
Guests	Stores guest details (name, contact, preferences).
Rooms	Manages room types, prices, and availability.
Reservations	Tracks bookings linked to guests and rooms.
Payments	Logs payment transactions for reservations.
Feedback	Collects guest feedback to improve services.

🔗 Entity Relationships

📌 One-to-Many: A guest can have multiple reservations, but a reservation belongs to one guest.

📌 One-to-Many: A room can have multiple reservations, but each reservation is linked to one room.

📌 One-to-Many: A reservation can have multiple payments, ensuring transaction flexibility.

📌 One-to-One: Each reservation has one feedback entry.

These relationships ensure data integrity, smooth transactions, and structured management.

Appendix

GUEST TABLE

Column Name	Data Type
Guest ID	INT (Primary key)
FirstName	VARCHAR (50)
LastName	VARCHAR (50)
Email	VARCHAR (100)
PhoneNumber	VARCHAR (20)
Address	VARCHAR (255)
DateOfBirth	DATE

ROOM TABLE

Column Name	Data Type
RoomID	INT (Primary key)
RoomType	VARCHAR (50)
PricePerNight	DECIMAL (10,2)
AvailibiltyStatus	VARCHAR (20)

Reservation Table

Column Name	Data Type
ReservationID	INT (Primary Key)
GuestID	INT (Foreign Key)
RoomID	INT (Foreign Key)
CheckInDate	DATE
CheckOutDate	DATE
TotalAmount	Decimal (10,2)
Status	VARCHAR (20)

Payment Table

Column Name	Data Type
PaymentID	INT (Primary Key)
ReservationID	INT (Foreign Key)
PaymentDate	DATE
AmountPaid	Decimal (10,2)
PaymentMethod	VARCHAR (50)

Feedback Table

Column Name	Data Type
FeedbackID	INT (Primary Key)
GuestID	INT (Foreign Key)
ReservationID	INT (Foreign Key)
Rating	INT
Comments	TEXT

SQL Queries & System Functionality

🔍 **Fetch All Reservations (Ordered by ID)**

SELECT * FROM Reservation ORDER BY Reservation_ID ASC;

🔍 **Check Room Availability**

SELECT * FROM Room WHERE Availability = 'Yes';

🔍 **View Payment Transactions for a Specific Guest**

SELECT * FROM Payments WHERE GuestID = 101;

These queries drive the reservation, payment, and guest feedback processes, ensuring smooth operations.

Benefits & Real World Impacts

🏨 Benefits for Hotels:

☑ Automated Operations → Reduces staff workload.

☑ Data-driven Decision Making → Insights from guest feedback improve services.

☑ Revenue Optimization → Smart tracking of payments and room availability.

👥 Benefits for Guests:

☑ Fast & Easy Booking → No long wait times.

☑ Personalized Experience → Custom room preferences and dining options.

☑ Secure Payments → Multiple transactions handled efficiently.

This system improves hospitality services while increasing business efficiency.

<u>Conclusion</u>

A well-structured hotel booking system is more than a convenience—it's necessary. This system automates operations, secures transactions, and enhances guest experiences.