**Title**: Hotel Management System

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**Purpose:**

This project focuses on developing a **Hotel Management System** that efficiently manages hotel bookings, room availability, and guest information using a structured relational database. The system is designed to simplify hotel operations by organizing data into four key tables: **Hotel**, **Guest**, **Room**, and **Booking**. The **Hotel** table stores information about different hotel locations, while the **Guest** table records details of each guest, such as names and contact numbers. The **Room** table tracks room types, prices, availability, and conditions, and the **Booking** table handles reservations, connecting guests to their booked rooms with check-in and check-out dates.

The database structure allows hotels to streamline their booking process, optimize room usage, and maintain organized records for better efficiency. By storing data in a clear and organized way, the system helps hotels provide better service, reduce manual errors, and improve overall guest experiences. This project lays the groundwork for future enhancements, such as adding a user interface and features like real-time room availability updates and automated notifications.

**Tables:**

**Hotel**

|  |  |  |
| --- | --- | --- |
| hotel\_id | INT | PRIMARY KEY |
| hotel\_name | VARCHAR | NOT NULL |
| location | VARCHAR |  |

A screenshot of a phone

Description automatically generated

**Guest**

|  |  |  |
| --- | --- | --- |
| guest\_id | INT | PRIMARY KEY |
| guest\_name | VARCHAR | NOT NULL |
| phone\_number | VARCHAR |  |

A screenshot of a phone number

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**Room**

|  |  |  |
| --- | --- | --- |
| room\_id | INT | PRIMARY KEY |
| room\_type | VARCHAR | NOT NULL |
| price | DECIMAL |  |
| room\_condition | VARCHAR | CHECK (room\_condition IN (‘Clean’, ‘Dirty’)) |
| status | VARCHAR | CHECK (status IN (‘Vacant’, ‘Occupied’)) |

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**Booking**

|  |  |  |
| --- | --- | --- |
| booking\_id | INT | PRIMARY KEY |
| guest\_id | INT | FOREIGN KEY REFERENCES Guest(guest\_id) |
| room\_id | INT | FOREIGN KEY REFERENCES Room(room\_id) |
| check\_in\_date | DATE | NOT NULL |
| check\_out\_date | DATE | NOT NULL |

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**Additional Info:**

**Diagram/Brainstorm:**

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**Schema SQL:**

-- Step 1: Create the tables

**CREATE** **TABLE** Hotel (

hotel\_id **INT** AUTO\_INCREMENT **PRIMARY** **KEY**,

hotel\_name **VARCHAR**(100) **NOT** **NULL**,

location **VARCHAR**(100)

);

**CREATE** **TABLE** Guest (

guest\_id **INT** AUTO\_INCREMENT **PRIMARY** **KEY**,

guest\_name **VARCHAR**(50) **NOT** **NULL**,

phone\_number **VARCHAR**(15)

);

**CREATE** **TABLE** Room (

room\_id **INT** AUTO\_INCREMENT **PRIMARY** **KEY**,

room\_type **VARCHAR**(50) **NOT** **NULL**,

price **DECIMAL**(8, 2),

room\_condition **VARCHAR**(10),

status **VARCHAR**(10)

);

**CREATE** **TABLE** Booking (

booking\_id **INT** AUTO\_INCREMENT **PRIMARY** **KEY**,

guest\_id **INT**,

room\_id **INT**,

check\_in\_date **DATE** **NOT** **NULL**,

check\_out\_date **DATE** **NOT** **NULL**,

**FOREIGN** **KEY** (guest\_id) **REFERENCES** Guest(guest\_id),

**FOREIGN** **KEY** (room\_id) **REFERENCES** Room(room\_id)

);

-- Step 2: Insert initial data into Hotel table

**INSERT** **INTO** Hotel (hotel\_name, location) **VALUES**

('Sunset Resort', 'Miami'),

('Mountain View Lodge', 'Denver');

-- Step 3: Insert new guests into the Guest table

**INSERT** **INTO** Guest (guest\_name, phone\_number) **VALUES**

('John Doe', '123-456-7890'),

('Jane Smith', '987-654-3210'),

('Mallory Sorola', '210-555-1234'),

('Demetrio Deanda', '210-555-5678'),

('Jose Valdespino', '210-555-9012'),

('Adrian Lopez', '210-555-3456');

-- Step 4: Insert rooms into the Room table

**INSERT** **INTO** Room (room\_type, price, room\_condition, status) **VALUES**

('Single King', 120.00, 'Clean', 'Vacant'),

('Double Queen', 150.00, 'Clean', 'Occupied'),

('Single King', 110.00, 'Dirty', 'Vacant'),

('Suite', 200.00, 'Clean', 'Vacant');

-- Step 5: Insert bookings into the Booking table

**INSERT** **INTO** Booking (guest\_id, room\_id, check\_in\_date, check\_out\_date) **VALUES**

(1, 1, '2024-11-12', '2024-11-14'),

(2, 2, '2024-11-13', '2024-11-15'),

(3, 3, '2024-12-01', '2024-12-03'), -- Jose Valdespino

(4, 4, '2024-12-05', '2024-12-08'), -- Adrian Lopez

(5, 2, '2024-12-10', '2024-12-12'), -- Mallory Sorola

(6, 1, '2024-12-15', '2024-12-18'); -- Demetrio Deanda

-- Step 6: Display all tables

-- Hotel Table

**SELECT** \* **FROM** Hotel;

-- Guest Table

**SELECT** \* **FROM** Guest;

-- Room Table

**SELECT** \* **FROM** Room;

-- Booking Table

**SELECT** \* **FROM** Booking;

**Query SQL:**

-- Display the Hotel table

**SELECT** \* **FROM** Hotel;

-- Display the Guest table

**SELECT** \* **FROM** Guest;

-- Display the Room table

**SELECT** \* **FROM** Room;

-- Display the Booking table

**SELECT** \* **FROM** Booking;