PROJECT BASED LEARNING RECORD
On
UCS4001
DATABASE MANAGEMENT SYSTEM

SCHOOL OF COMPUTER SCIENCE AND ENGINERING

IILM UNIVERSITY

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SECTION :- 2CSE11

Hotel Booking System Database Project Report

1. Introduction

The Hotel Booking System database is designed to manage hotel reservations efficiently. It stores information about customers, hotels, rooms, bookings, and payments. The main goal of this database is to organize booking operations, maintain records, and ensure data consistency.

2.Abstract

This project presents the design and implementation of a structured relational database system. The purpose of this system is to efficiently store, manage, and retrieve organized data using a well defined schema and relationships between entities. The database is designed using Entity–Relationship (ER) modeling concepts and is implemented in MariaDB using SQL commands. The project demonstrates how real world data can be transformed into structured tables with primary keys, foreign keys, and constraints to maintain data integrity and consistency. The system ensures accuracy, avoids redundancy, and supports efficient querying, making it suitable for academic learning and real world applications.

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3. Objective

The objective of this database system is to:

- **Store customer details**
- **Maintain hotel and room information**

- **Record bookings**
- **Track payments**
- **Establish relationships between entities**

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3. Entities and Attributes

3.1 Customer

Stores details of customers who make bookings.

- **customer_id (Primary Key)**
- **name**
- **email**
- **phone**
- **address**

3.2 Hotel

Contains information about hotels available for booking.

- **hotel_id (Primary Key)**
- **hotel_name**
- **location**

- **rating**
- **contact_number**

3.3 Room

Stores details about rooms in each hotel.

- **room_id (Primary Key)**
- **room_type**
- **price**
- **availability**
- **hotel_id (Foreign Key)**

3.4 Booking

Records booking transactions made by customers.

- **booking_id (Primary Key)**
- **check_in**
- **check_out**
- **customer_id (Foreign Key)**
- **room_id (Foreign Key)**

3.5 Payment

Stores payment information related to bookings.

- **payment_id (Primary Key)**
- **amount**
- **payment_method**
- **payment_date**
- **booking_id (Foreign Key)**

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4. Relationships Between Entities

1. **Customer – Booking**
    - **One customer can make many bookings.**
    - **One booking belongs to only one customer.**
    - **Relationship type: One-to-Many**
2. **Hotel – Room**
    - **One hotel contains many rooms.**
    - **One room belongs to only one hotel.**
    - **Relationship type: One-to-Many**
3. **Room – Booking**

- **One room can be booked multiple times on different dates.**
- **Each booking refers to one room.**
- **Relationship type: One-to-Many**

4. **Booking – Payment**
   - **Each booking has exactly one payment.**
   - **Each payment is linked to one booking.**
   - **Relationship type: One-to-One**

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5. Keys Used

Primary Keys uniquely identify each record:

- **customer_id**
- **hotel_id**
- **room_id**
- **booking_id**
- **payment_id**

Foreign Keys maintain relationships:

- **hotel_id in Room**
- **customer_id in Booking**

- **room_id in Booking**
- **booking_id in Payment**

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6. Advantages of This Database Design

- **Eliminates duplicate data**
- **Maintains data integrity**
- **Ensures structured storage**
- **Supports fast queries**
- **Easy to maintain and update**

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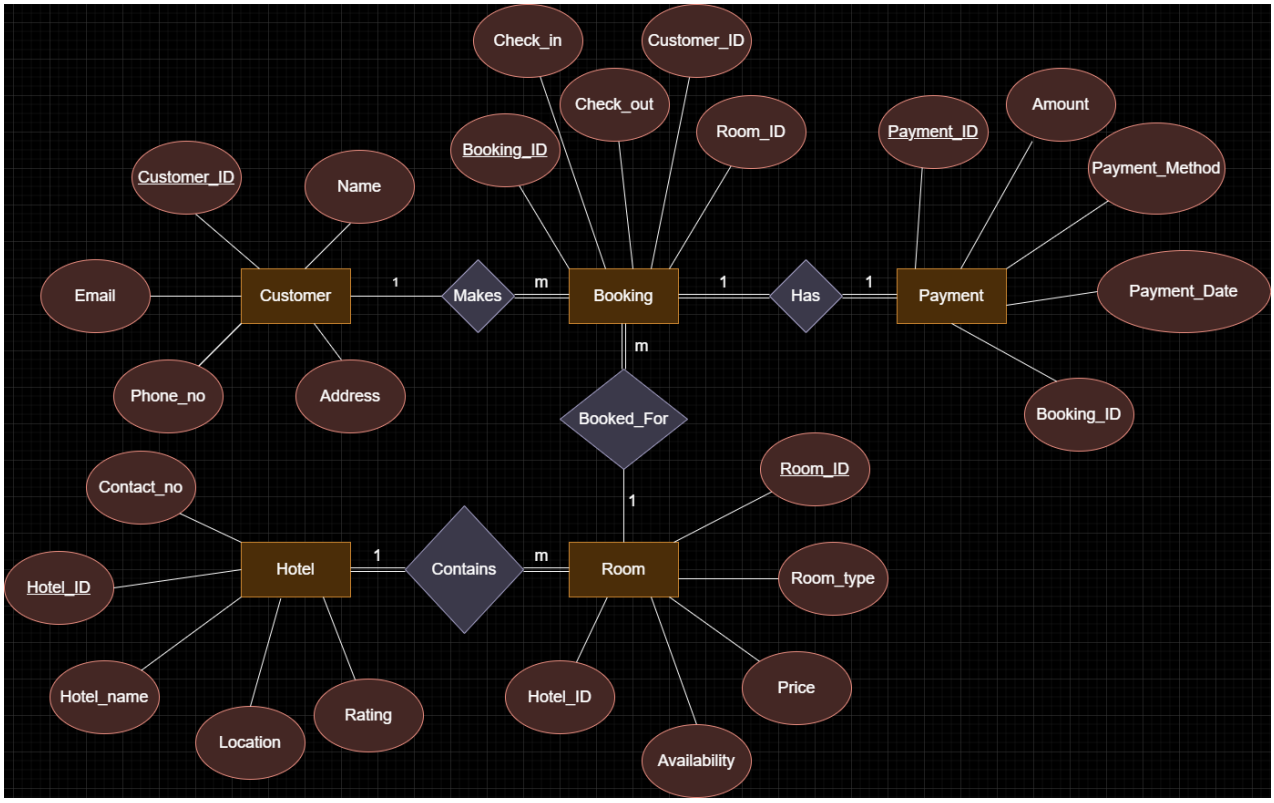
7. Conclusion

The Hotel Booking System database is a well-structured relational model that efficiently manages hotel reservations. It clearly defines entities, attributes, and relationships, ensuring accurate data storage and retrieval. This design supports real-world booking operations and can be expanded in the future to include additional features such as staff management or online payment gateways.

E-R DIAGRAM :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Customer_ID
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Booking_ID
Room_ID
Payment_ID
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Payment_Method
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