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DATABASE

Project Report

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Homestay Ordering System - Table of Contents

1. Project Overview-----	2
2. Database Design and Requirements-----	3
3. Logical and Physical Design-----	5
4. Functionalities-----	7
5. SQL data interface(refer “ user manual.pdf”)	
6. Conclusion-----	9

1. Project Overview

1.1 Project Title: Homestay Ordering System

1.2 Introduction

The Homestay Ordering System aims to optimize and centralize the booking process for homestays by leveraging a structured database management system. This project focuses on improving efficiency, reducing human error, and providing an enhanced experience for all users involved.

1.3 Purpose:

To address inefficiencies in traditional homestay booking methods by implementing a centralized and automated database system. The system streamlines booking processes, ensures data accuracy, and provides user-friendly interfaces for landlords, guests, and administrators.

2. Database Design and Requirements

2.1 Key Entities:

Landlord - Manages properties and bookings.

Guest - Searches and reserves rooms.

Administration - Maintains the system's integrity and oversees all user actions.

Room - Represents available accommodation.

Reservation Record - Tracks bookings and payment status

2.2 Data Requirement

Entity	Data to be stored	Requirements of Data
Landlord	1. Landlord ID 2. Name 3. Email 4. Password 5. Phone Number	1 . [1] Landlord ID is unique. 2 . [2] Landlord need to sign up an account by their email before using the system. 3 . [4] Must be non- empty and meet password strength requirements. 4 . [5] Phone number must be verified upon signing up.
Guests	1. Guests ID 2. Name 3. Email 4. Password 5. Phone number	1 . [1] Guests ID is unique. 2 . [2] Guests need to sign up for an account by their email before using the system. 3 . [4] Must be non-empty and meet password strength requirements. 4 . [5] Phone number must be verified upon signing up.
Administration	1. Administration ID 2. Name 3. Email 4. Username 5. Phone Number	1 . [1] Must be unique and used as the primary key to identify the administrator. 2 . [4] The value must be non-empty. 3 . [5] The phone format is valid for administrator contact

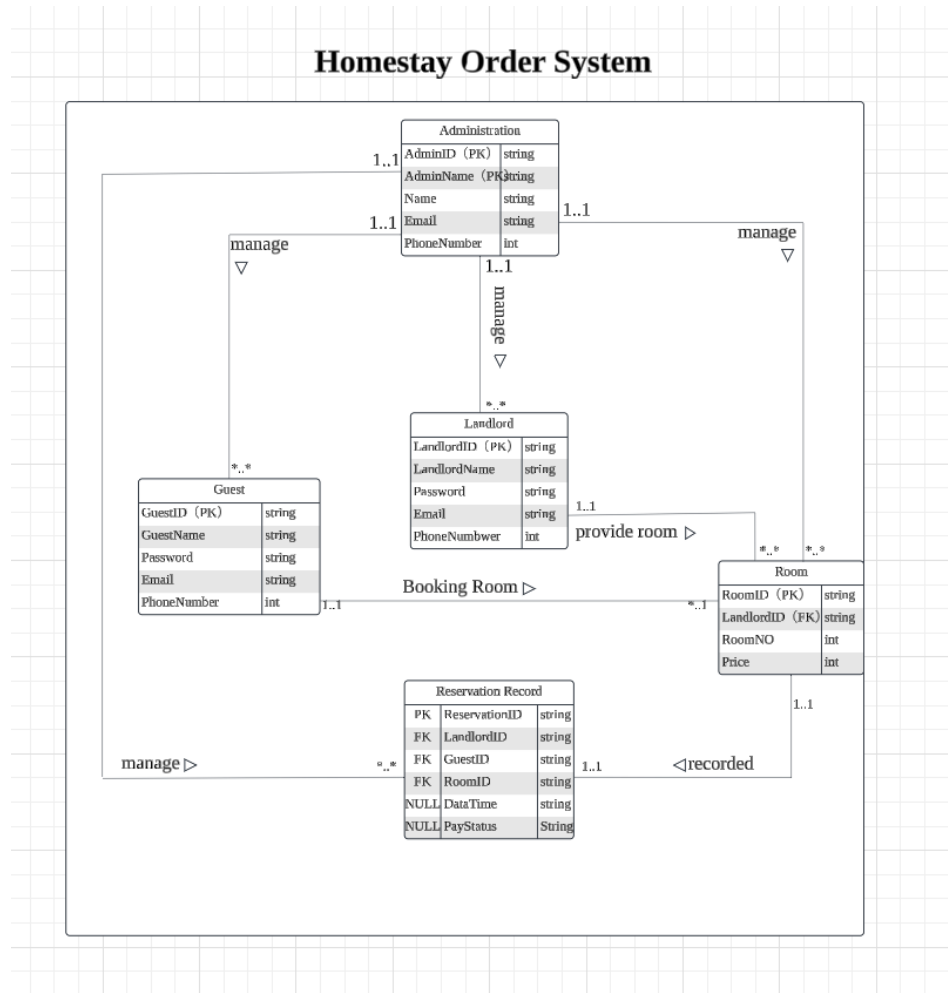
Room	1. RoomID 2. RoomNO 3. Price 4. LandlordID	1. [1]Room ID is unique.
Reservations Record	1. Reservation ID 2. Landlord ID 3. Guest ID 4. Check-in and check-out times 5. Payment status	1. [1] The Reservation ID must be unique. 2. [5] Payment status must be updated in real time.

2.3 Transaction Requirements

Entity	Data	Data Entry	Data Update	Data Deletion	Data Queries
Landlord	1. Landlord ID 2. Name 3. Email 4. Password 5. Phone	Sign up by landlord	Landlord updates personal information	Landlord deletes account	The admin queries the landlord data
Guests	1. Guests ID 2. Name 3. Email 4. Password 5. Phone	Sign up by Guests	Guests updates personal information	Guest deletes account	The admin queries the guest data
Reservations Record	1. Reference Number 2. check-in time 3. check-out time	Guests submit a reservation	Landlord or guests update booking information	The admin deletes the reservation record	Landlord, guests and admin check booking information
Room	1. RoomID 2. RoomNO 3. Price 4. LandlordID	Landlord adds a room	Landlord updates room details	Landlord removes a room	Admin or guests query room availability and detail
Administration	1. Admin ID 2. Name 3. Email 4. Username 5. Phone	Sign up by admin	Admin updates personal information	The admin deletes another user account	The admin queries the information about all users in the system

3. Logical and Physical Design

3.1 Entity-Relationship Diagram (ERD):



3.2 Entity relationship description:

Administration: Represents system administrators who manage all entities. (1 ..*)

Landlord: Represents landlords who provide rooms. (1 .. *)

Guest: Represents guests who book rooms through. (1 .. *)

Room: Represents rooms provided by landlords. (1 .. *)

Reservation Record: Record guest reservations and room information provided by hosts, connecting guests, landlord and rooms. (1 ..1)

3.3 Data dictionary

Administration

Attribute	Type	Description
AdminID(PK)	String	Unique identifier for administrators.
AdminName	String	Unique username for administrators.
Name	String	Administrator's name.
Email	String	Contact email of the administrator.
PhoneNumber	Int	Contact phone number of the administrator.

Landlord

Attribute	Type	Description
LandlordID(PK)	String	Unique identifier for landlords.
LandlordName	String	Unique username for landlords.
Password	String	Password for landlord login.
Email	String	Contact email of the landlord.
PhoneNumber	Int	Contact phone number of the landlord.

Guest

Attribute	Type	Description
GuestID(PK)	String	Unique identifier for guests.
GuestName	String	Unique username for guests.
Password	String	Password for guest login.
Email	String	Contact email of the guest.
PhoneNumber	Int	Contact phone number of the guest.

Room

Attribute	Type	Description
RoomID(PK)	String	Unique identifier for rooms.
LandlordID(FK)	String	Foreign key linking to Landlord.
RoomNo	Int	Room number
Price	Int	Price about the room.

Reservation Record

Attribute	Type	Description
ReservationID(PK)	String	Unique identifier for reservations.
LandlordId(FK)	String	Foreign key linking to Landlord.
GuestID(FK)	String	Foreign key linking to Guest.
RoomID(FK)	String	Foreign key linking to Room.
DateTime	String	Date and time of reservation.
Paystatus	String	Payment status: Pending or Completed.

4. Functionalities

1. Landlord Functions:

- View, add, delete, and update room information.
- View reservations and room revenue.

2. Guest Functions:

- View booking history and unreserved rooms.
- Book or cancel room reservations.
- Update personal information.

3. Administrator Functions:

- Manage user information and reservations.
- View details of all landlords, guests, and rooms.
- Delete user accounts when necessary.

5. SQL Data Interface

Refer to the 'user manual.pdf' file

6. Conclusion

The Homestay Ordering System is an efficient solution designed specifically for managing homestay operations. It offers reliable features and a clear, intuitive user interface to meet the needs of landlords, guests, and administrators. By streamlining booking and management processes, the system provides a convenient user experience for all, supporting the efficient operation and sustainable growth of homestay businesses.