

## 2.0 Database Design Requirements

### 2.1 Data Requirements

Entity	Data to be stored	Requirements of Data
Landlord	<ol style="list-style-type: none"><li>1. Landlord ID</li><li>2. Name</li><li>3. Email</li><li>4. Password</li><li>5. Phone Number</li></ol>	<ol style="list-style-type: none"><li>1 . [1] Landlord ID is unique.</li><li>2 . [2] Landlord need to sign up an account by their email before using the system.</li><li>3 . [4] Must be non-empty and meet password strength requirements.</li><li>4 . [5] Phone number must be verified upon signing up.</li></ol>
Guests	<ol style="list-style-type: none"><li>1. Guests ID</li><li>2. Name</li><li>3. Email</li><li>4. Password</li><li>5. Phone number</li></ol>	<ol style="list-style-type: none"><li>1 . [1] Guests ID is unique.</li><li>2 . [2] Guests need to sign up an account by their email before using the system.</li><li>3 . [4] Must be non-empty and meet password strength requirements.</li><li>4 . [5] Phone number must be verified upon signing up.</li></ol>
Administration	<ol style="list-style-type: none"><li>1. Administration ID</li><li>2. Name</li><li>3. Email</li><li>4. Username</li><li>5. Phone Number</li></ol>	<ol style="list-style-type: none"><li>1 . [1] Must be unique and used as the primary key to identify the administrator.</li><li>2 . [4] The value must be non-empty.</li><li>3 . [5] The phone format is valid for administrator contact</li></ol>
Room	<ol style="list-style-type: none"><li>1. RoomID</li><li>2. RoomNO</li><li>3. Price</li><li>4. LandlordID</li></ol>	<ol style="list-style-type: none"><li>1. [1]Room ID is unique.</li></ol>

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.
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## 2.2 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	5. RoomID 6. RoomNO 7. 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

### 2.3 Cross-Reference Analysis

Entity	Landlord view	Guest view	Admin view
Landlord	×		×
Guest		×	×
Reservation Record	×	×	×
Room	×	×	×
Administration			×