**Student Housing and Roommate**

**Problem Statement:**

In Kigali, the growing population of college students faces significant challenges in finding suitable and affordable housing. With a rapidly expanding student body and limited housing options, students often struggle to identify appropriate living spaces that meet their needs in terms of affordability, location, and roommate compatibility. Additionally, the lack of a centralized platform for housing listings creates inefficiencies, leading to wasted time and missed opportunities. Landlords also face difficulties in reaching their target tenants and ensuring transparent communication.

This project aims to develop a **Student Housing and Roommate Finder Database** that provides a scalable, database-driven solution to bridge the gap between students and landlords. The platform will streamline the housing search process, offering an easy-to-use interface for students to find affordable rooms, compare listings based on location, and connect with potential roommates. At the same time, it will help landlords manage their listings more effectively and foster transparency and trust within the local housing market. By addressing these pain points, the platform will create a more efficient and accessible housing ecosystem for college students in Kigali.

**1. Users Table**

This table stores information about all users, whether they are **students** or **landlords**.

**Attributes**:

* **user\_id** (Primary Key) – Unique ID for each user.
* **username** – User's username.
* **email** – User’s email address.
* **password\_hash** – Hashed password for login.
* **role** – "student" or "landlord".
* **phone\_number** – Optional, for contact.
* **created\_at** – Timestamp when the profile was created.

**2. Properties Table**

This table stores details about rental properties posted by **landlords**.

**Attributes**:

* **property\_id** (Primary Key) – Unique ID for each property.
* **landlord\_id** (Foreign Key) – References **user\_id** of the landlord (from Users table).
* **address** – Property address.
* **price\_per\_month** – Rent per month.
* **room\_type** – Shared room, private room, or apartment.
* **amenities** – A simple list of amenities (e.g., "WiFi, washing machine").
* **available\_from\_date** – Date when the property is available.
* **created\_at** – Timestamp when the property was posted.

**3. Roommates Table**

This table holds roommate preferences for **students**.

**Attributes**:

* **roommate\_id** (Primary Key) – Unique ID for each student’s roommate profile.
* **student\_id** (Foreign Key) – References **user\_id** of the student (from Users table).
* **budget** – Maximum rent the student is willing to pay.
* **room\_type\_preference** – Shared or private room.
* **smoking** – Boolean: Does the student smoke? (True/False)
* **gender\_preference** – Gender preference for roommates (optional).
* **created\_at** – Timestamp when the profile was created.

**4. Listings Table**

This table connects **students** to **properties** they are interested in.

**Attributes**:

* **listing\_id** (Primary Key) – Unique ID for each listing.
* **student\_id** (Foreign Key) – References **user\_id** of the student.
* **property\_id** (Foreign Key) – References **property\_id** of the property.
* **status** – "interested", "visited", "booked" (the student's interaction with the property).
* **created\_at** – Timestamp when the listing was created.

**5. Reviews Table**

This table stores reviews from **students** about properties or roommates.

**Attributes**:

* **review\_id** (Primary Key) – Unique ID for each review.
* **reviewer\_id** (Foreign Key) – References **user\_id** of the reviewer (student).
* **reviewee\_id** (Foreign Key) – References **user\_id** of the person being reviewed (landlord or student).
* **review\_type** – "property" or "roommate".
* **rating** – Rating score (1 to 5 stars).
* **comments** – Text feedback.
* **created\_at** – Timestamp of when the review was posted.

**Relationships:**

* **Users**: Can be a student or a landlord (1 relationship between Users and Properties).
* **Roommates**: Each student can have a roommate profile (1:1 relationship between Users and Roommates).
* **Listings**: A student can have multiple listings for different properties, showing interest or status (N relationship between Users and Properties via Listings).
* **Reviews**: Students can review properties and roommates (N relationship between Users and Reviews).

**Conclusion**

The **Student Housing and Roommate Finder Database** aims to address housing challenges faced by students in Kigali by creating a centralized platform that connects students with affordable housing and potential roommates. The system streamlines the search process, making it easier for students to find suitable properties and manage roommate preferences, while also helping landlords manage listings more efficiently. By organizing key data—such as user profiles, property details, roommate preferences, and reviews—the platform fosters transparency, trust, and better communication, creating a more efficient and accessible housing ecosystem for all users.