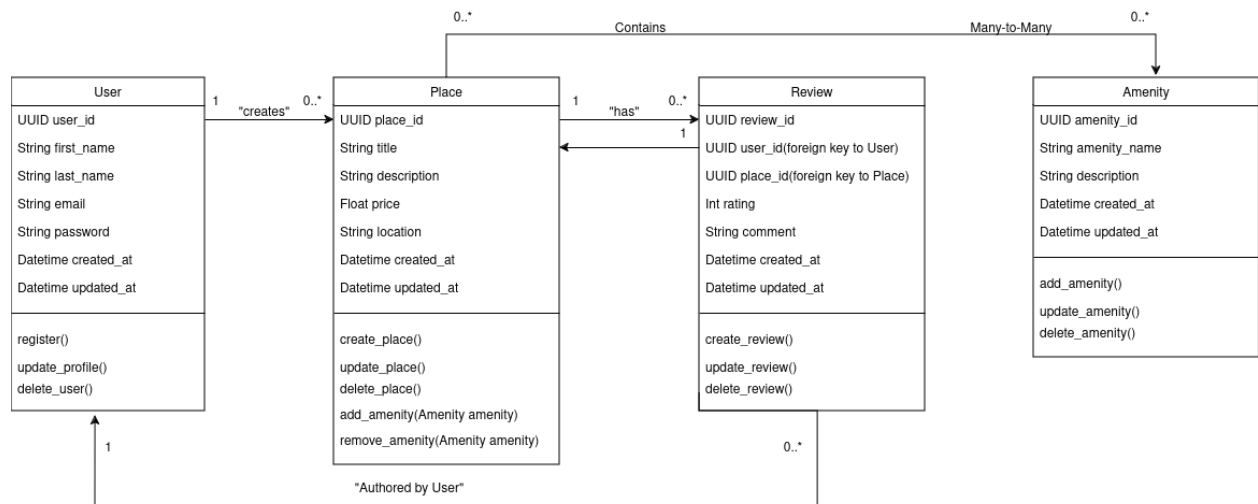


Business Logic Layer Design

*Class Diagram:



Entity Descriptions:

*User

- **Attributes:**
 - **id (UUID4):** Unique identifier for the user.
 - **first_name:** The user's first name.
 - **last_name:** The user's last name.
 - **email:** The user's unique email address, used for login and identification.
 - **password:** Hashed password for authentication.
 - **is_admin (boolean):** Indicates if the user has administrative privileges.
 - **created_at (datetime):** Timestamp when the user account was created.
 - **updated_at (datetime):** Timestamp when the user account was last updated.
- **Methods:** May include registration, profile updates, deletion, and authentication mechanisms.

*Place

- **Attributes:**
 - **id (UUID4):** Unique identifier for the place.
 - **title:** A descriptive title/name of the place.
 - **description:** Detailed information about the place.
 - **price:** The cost associated with renting or staying at the place.
 - **latitude:** Geographical coordinate (latitude) of the place.
 - **longitude:** Geographical coordinate (longitude) of the place.

- **owner_id**: References the user who owns this place.
 - **created_at (datetime)**: Timestamp when the place was created.
 - **updated_at (datetime)**: Timestamp when the place was last updated.
- **Methods**: Might include creating, updating, and deleting places, as well as methods for associating or dissociating amenities.

*Review

- **Attributes**:
 - **id (UUID4)**: Unique identifier for the review.
 - **place_id**: References the place that is being reviewed.
 - **user_id**: References the user who wrote the review.
 - **rating (integer)**: Numeric rating given by the user (e.g., 1–5 stars).
 - **comment**: Textual feedback provided by the user.
 - **created_at (datetime)**: Timestamp when the review was created.
 - **updated_at (datetime)**: Timestamp when the review was last updated.
- **Methods**: May include creating, updating, and deleting reviews, as well as retrieving all reviews for a place.

Amenity

- **Attributes**:
 - **id (UUID4)**: Unique identifier for the amenity.
 - **name**: The name of the amenity (e.g., “Wi-Fi,” “Pool”).
 - **description**: Detailed description of the amenity.
 - **created_at (datetime)**: Timestamp when the amenity was created.
 - **updated_at (datetime)**: Timestamp when the amenity was last updated.
- **Methods**: Could include adding new amenities, updating amenity details, and removing amenities.

Relationships:

- **User to Place (One-to-Many)**:
A single User can own multiple Places, but each Place has a single owner (identified by `owner_id`).
- **User to Review (One-to-Many)**:
A single User can write multiple Reviews, but each Review is associated with only one User.
- **Place to Review (One-to-Many)**:
A single Place can have multiple Reviews, but each Review is tied to exactly one Place.
- **Place to Amenity (Many-to-Many)**:
A Place can have multiple Amenities, and an Amenity can be associated with multiple Places. This many-to-many relationship is typically managed through a join table or associative entity.

