Database Model Design

This document outlines the database models used in our FlyNext project. The design is based on the following models:

User: Represents both regular users and hotel owners. Contains personal details and authentication information. Each user can have multiple bookings and notifications.

Hotel: Represents a hotel listed on the platform. Each hotel can have multiple rooms and bookings.

Room: Represents a room type in a hotel. It includes details like amenities, price per night, and the number of available rooms. Each room belongs to a hotel and can be booked multiple times.

Booking: Represents a hotel booking which represents a hotel reservation. It links users with hotels and rooms.

FlightBooking: Represents flight reservations made through the AFS API. Stores minimal details and is maintained in a separate table to distinguish flight bookings from hotel bookings.

Notification: Represents messages sent to users regarding the status of their bookings or other important updates.

City and Airport: These models store location and airport data fetched from the AFS API.

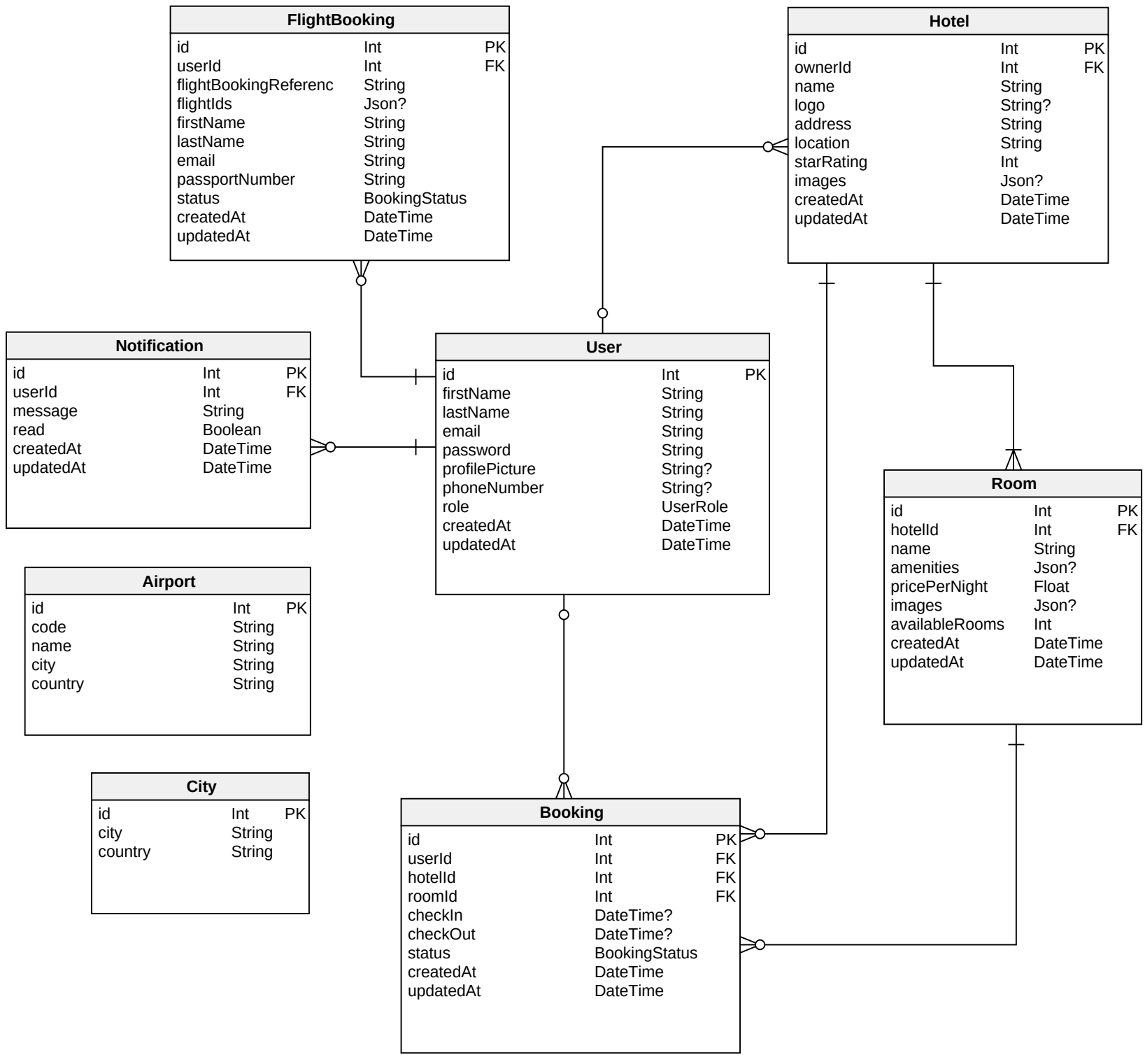
The following diagram (see attached ER diagram on next page) illustrates the relationships between these models. Notice that:

- A **User** can create multiple **Bookings/FlightBookings** and receive multiple **Notifications**.
- A **Hotel** is owned by a single **User** and can offer multiple **Rooms** and receive multiple **Bookings**.
- A **Room** belongs to one **Hotel** and can be associated with multiple **Bookings**.

The ER diagram provides additional details on the exact columns, data types, and constraints for each table.

Note on Enum Fields:

- **UserRole:** Possible values are `USER` and `HOTEL_OWNER`. However the `HOTEL_OWNER` role is not actively used in our authorization logic at this time, we have kept it for future-proofing. We might also add other roles like Admin later, if needed.
- **BookingStatus:** Possible values are `CONFIRMED`, `CANCELED`, and `PENDING`.


FlightBooking
id Int PK
userId Int FK
flightBookingReferenc String
flightIds Json?
firstName String
lastName String
email String
passportNumber String
status BookingStatus
createdAt DateTime
updatedAt DateTime
Hotel
id Int PK
ownerId Int FK
name String
logo String?
address String
location String
starRating Int
images Json?
createdAt DateTime
updatedAt DateTime
Notification
id Int PK
userId Int FK
message String
read Boolean
createdAt DateTime
updatedAt DateTime
User
id Int PK
firstName String
lastName String
email String
password String
profilePicture String?
phoneNumber String?
role UserRole
createdAt DateTime
updatedAt DateTime
Room
id Int PK
hotelId Int FK
name String
amenities Json?
pricePerNight Float
images Json?
availableRooms Int
createdAt DateTime
updatedAt DateTime
Airport
id Int PK
code String
name String
city String
country String
City
id Int PK
city String
country String
Booking
id Int PK
userId Int FK
hotelId Int FK
roomId Int FK
checkIn DateTime?
checkOut DateTime?
status BookingStatus
createdAt DateTime
updatedAt DateTime