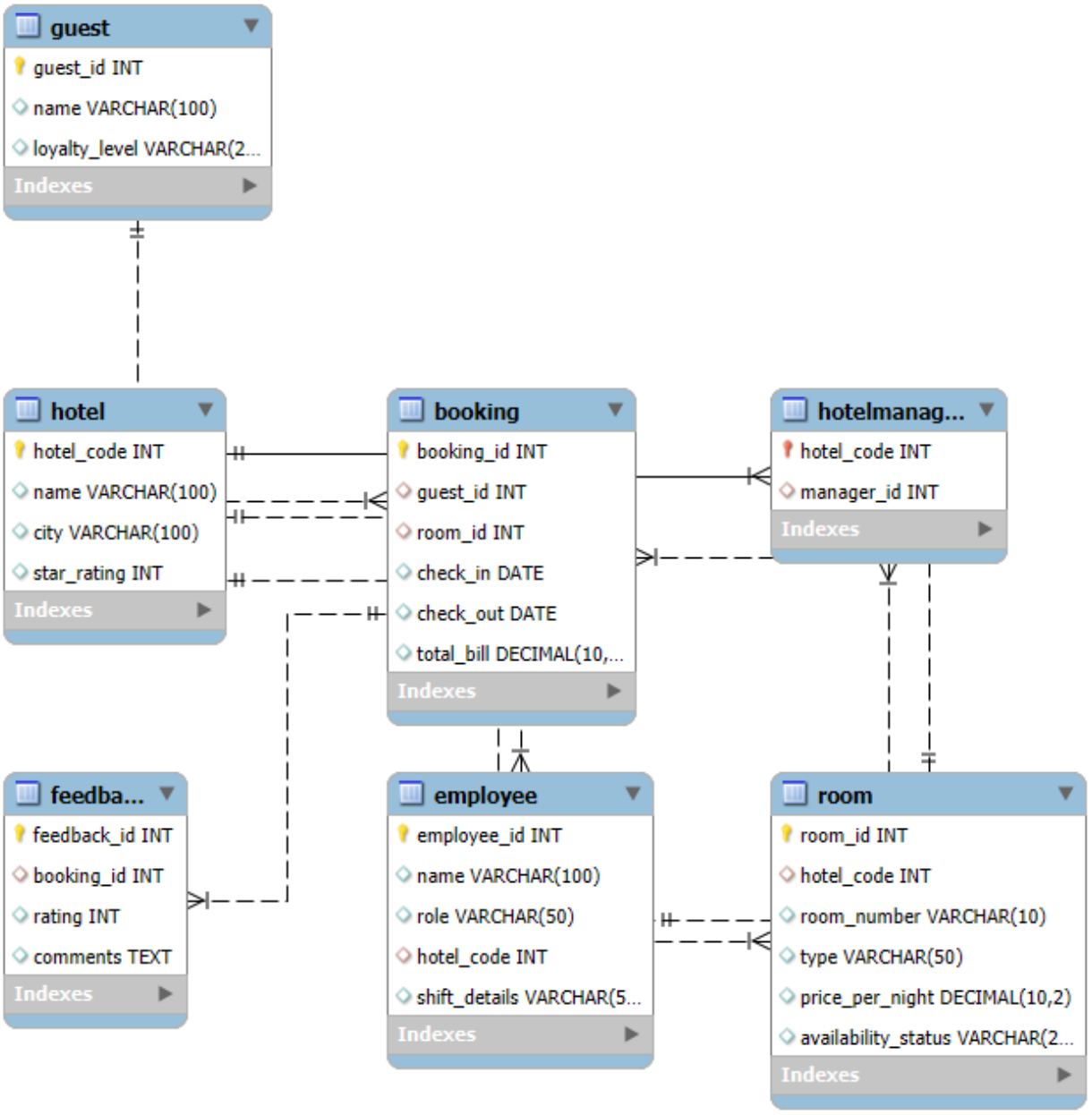
Problem: 4 Multi-city Hotel Chain Management System

Design an Entity-Relationship schema for a multi-city hotel chain management system. The database must maintain hotels identified by hotel code, name, city, manager, number of rooms, and star rating. Rooms have room number, type, price per night, availability status, and belong to a hotel.

Guests have guest ID, name, loyalty level, booking history, and feedback given for bookings. Bookings have booking ID, guest, room, check-in and check-out dates, and total bill. Employees have employee ID, name, role, hotel assigned, and shift details.

Each hotel has multiple rooms and employees, and is managed by a manager who is also an employee. Guests can book rooms in any hotel and can have multiple active or past bookings. Rooms can be booked by different guests over time, but only one guest can occupy a room at a given time.

Employees are assigned to a specific hotel and can work in different shifts and roles. Loyalty level of a guest is updated based on their booking history and feedback. Feedback is linked to specific bookings and can influence loyalty level updates.


guest
guest_id INT
name VARCHAR(100)
loyalty_level VARCHAR(2...
Indexes
hotel
hotel_code INT
name VARCHAR(100)
city VARCHAR(100)
star_rating INT
Indexes
booking
booking_id INT
guest_id INT
room_id INT
check_in DATE
check_out DATE
total_bill DECIMAL(10,...
Indexes
hotelmanag...
hotel_code INT
manager_id INT
Indexes
feedba...
feedback_id INT
booking_id INT
rating INT
comments TEXT
Indexes
employee
employee_id INT
name VARCHAR(100)
role VARCHAR(50)
hotel_code INT
shift_details VARCHAR(5...
Indexes
room
room_id INT
hotel_code INT
room_number VARCHAR(10)
type VARCHAR(50)
price_per_night DECIMAL(10,2)
availability_status VARCHAR(2...
Indexes

```
-- Hotel table
CREATE TABLE Hotel (
    hotel_code INT PRIMARY KEY,
    name VARCHAR(100),
    city VARCHAR(100),
    star_rating INT
);

-- Room table
CREATE TABLE Room (
    room_id INT PRIMARY KEY AUTO_INCREMENT,
    hotel_code INT,
    room_number VARCHAR(10),
    type VARCHAR(50),
    price_per_night DECIMAL(10,2),
    availability_status VARCHAR(20),
    FOREIGN KEY (hotel_code) REFERENCES Hotel(hotel_code)
);


-- Guest table
CREATE TABLE Guest (
    guest_id INT PRIMARY KEY AUTO_INCREMENT,
    name VARCHAR(100),
    loyalty_level VARCHAR(20)
);

-- Booking table
CREATE TABLE Booking (
    booking_id INT PRIMARY KEY AUTO_INCREMENT,
    guest_id INT,
    room_id INT,
    check_in DATE,
    check_out DATE,
    total_bill DECIMAL(10,2),
    FOREIGN KEY (guest_id) REFERENCES Guest(guest_id),
    FOREIGN KEY (room_id) REFERENCES Room(room_id)
);


-- Feedback table
```

```
CREATE TABLE Feedback (
    feedback_id INT PRIMARY KEY AUTO_INCREMENT,
    booking_id INT,
    rating INT CHECK (rating BETWEEN 1 AND 5),
    comments TEXT,
    FOREIGN KEY (booking_id) REFERENCES Booking(booking_id)
);

-- Employee table
CREATE TABLE Employee (
    employee_id INT PRIMARY KEY AUTO_INCREMENT,
    name VARCHAR(100),
    role VARCHAR(50),
    hotel_code INT,
    shift_details VARCHAR(50),
    FOREIGN KEY (hotel_code) REFERENCES Hotel(hotel_code)
);


-- Manager Assignment (1 manager per hotel, and manager is an employee)
CREATE TABLE HotelManager (
    hotel_code INT PRIMARY KEY,
    manager_id INT,
    FOREIGN KEY (hotel_code) REFERENCES Hotel(hotel_code),
    FOREIGN KEY (manager_id) REFERENCES Employee(employee_id)
);
```