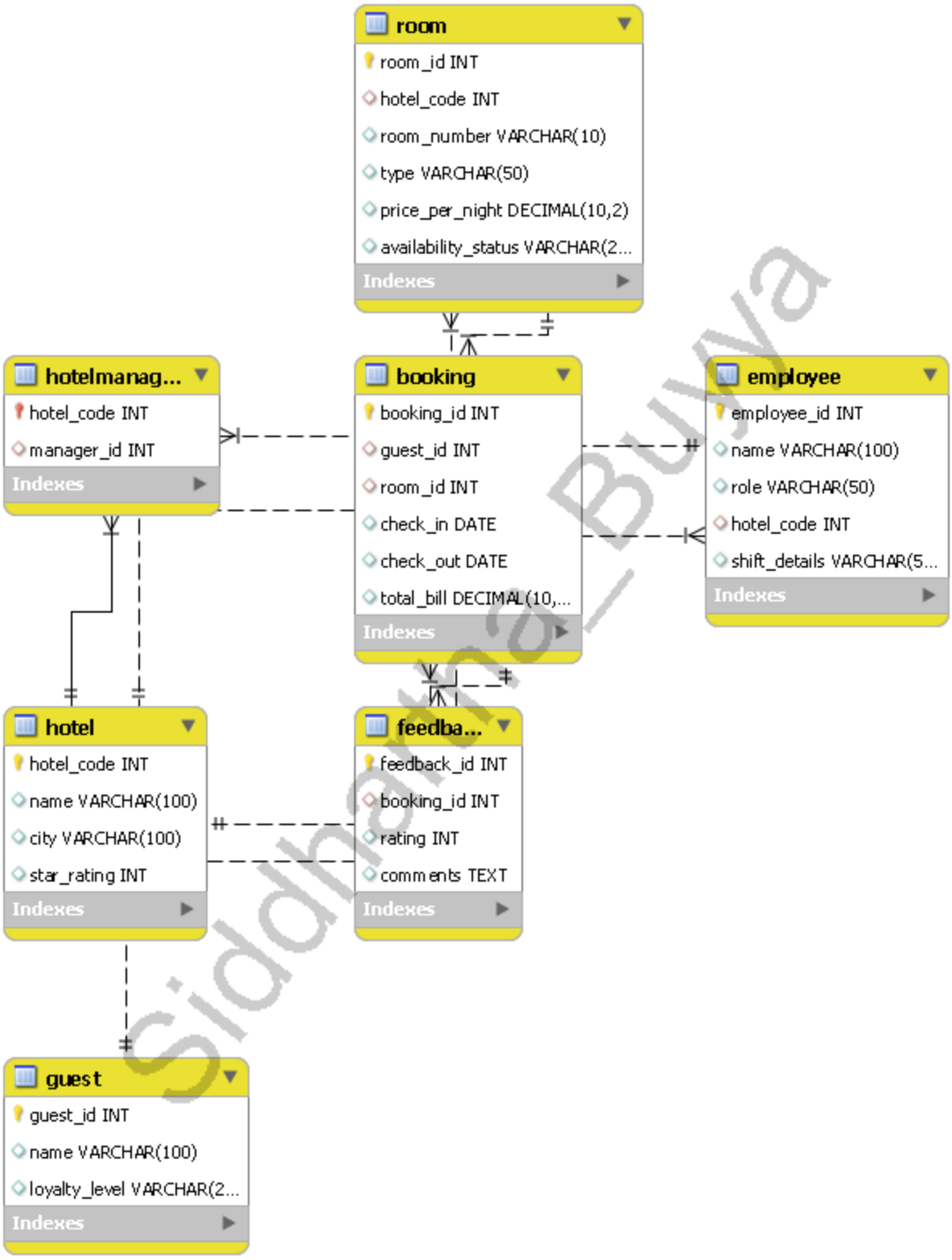
Project 4: Multi-City Hotel Chain Management System

Design an **Entity-Relationship (ER) schema** for a multi-city hotel chain management system. The database should keep track of **hotels**, identified by hotel code, name, city, manager, number of rooms, and star rating. Each hotel comprises multiple **rooms**, which have a room number, type, price per night, and availability status.

Guests have a unique guest ID, name, loyalty level, booking history, and feedback that they provide for their stays. **Bookings** link guests to hotel rooms and include details such as booking ID, check-in and check-out dates, and total amount due.

Employees have an employee ID, name, role, hotel assignment, and shift details. Each hotel has numerous employees and is managed by a manager, who is also an employee of that hotel.

A **guest** may make multiple booking reservations at different hotels, and a **room** can be occupied by different guests over time — but only by **one guest at a time**. **Employees** are attached to a specific hotel and may perform different roles and shift duties. The loyalty level of a guest evolves based on their booking history and feedback. Furthermore, **feedback** is directly related to a booking and can affect loyalty level adjustments.



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)
);
```