

# Hospital Management System Database Schema

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## Tables

### Table 1: patients

- **Primary Key:** id
- **Fields:** full\_name, date\_of\_birth, gender, address, phone\_number

### Table 2: doctors

- **Primary Key:** id
- **Fields:** full\_name, specialty, phone\_number

### Table 3: appointments

- **Primary Key:** id
- **Fields:** patient\_id, doctor\_id, appointment\_date, status
- **Indexes:** patient\_id, doctor\_id

### Table 4: medical\_records

- **Primary Key:** id
- **Fields:** patient\_id, diagnosis, treatment, prescription, record\_date
- **Indexes:** patient\_id

### Table 5: billing

- **Primary Key:** id
- **Fields:** patient\_id, appointment\_id, total\_amount, billing\_date
- **Indexes:** patient\_id, appointment\_id

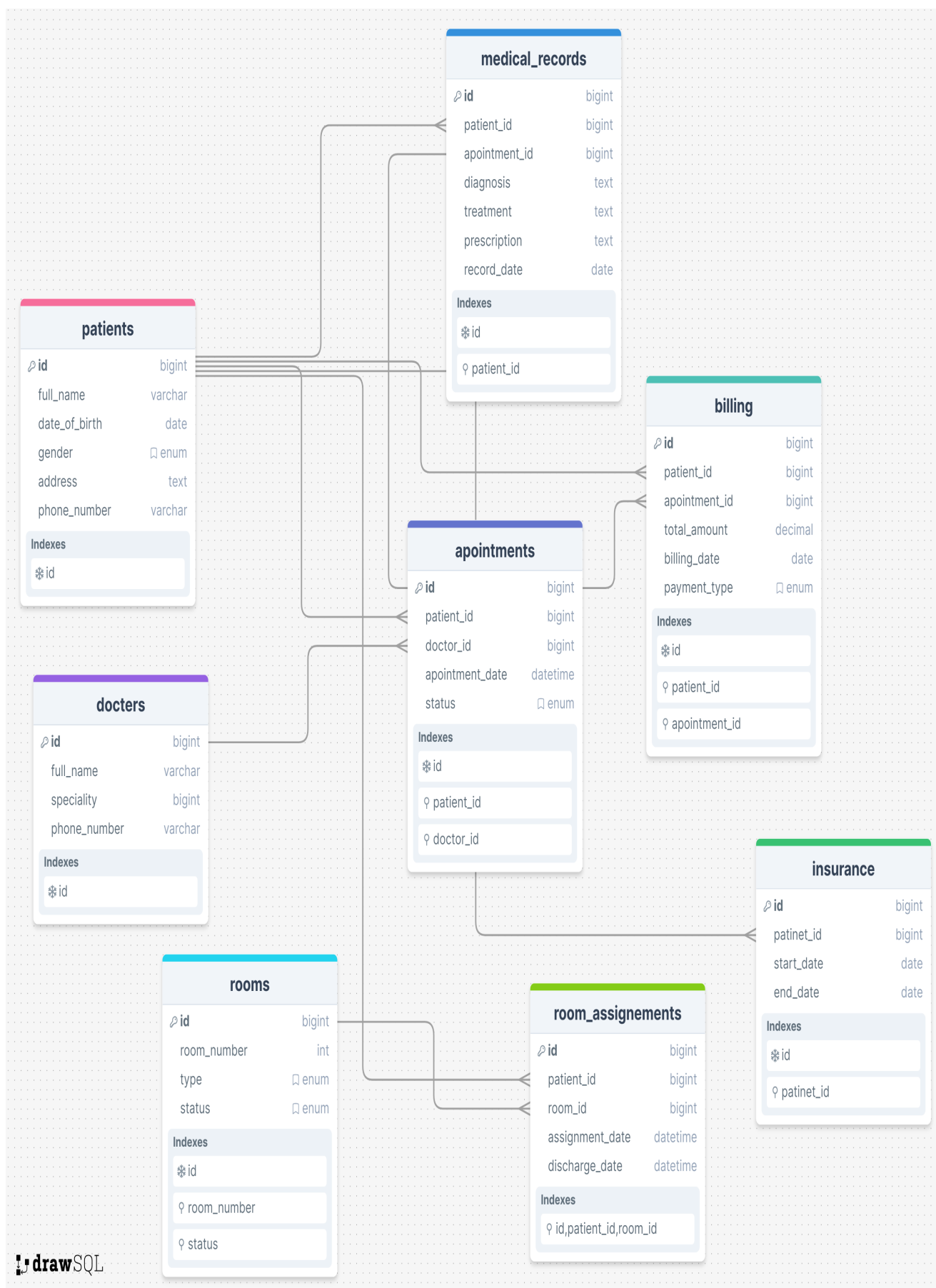
### Table 6: rooms

- **Primary Key:** id
- **Fields:** room\_number, type, status
- **Indexes:** room\_number

### Table 7: room\_assignments

- **Primary Key:** id
- **Fields:** patient\_id, room\_id, assignment\_date, discharge\_date
- **Indexes:** patient\_id, room\_id

Schema Diagram - [DrawSQL link](#)



## Use Case Queries

**Query 1: List all appointments for a specific doctor on a given date:**

```
SELECT a.id, p.full_name AS patient_name, a.appointment_date, a.status
FROM appointments a
JOIN patients p ON a.patient_id = p.id
WHERE a.doctor_id = :doctor_id
      AND DATE(a.appointment_date) = :date;
```

**Query 2: Retrieve the medical records for a specific patient:**

```
SELECT mr.id, mr.diagnosis, mr.treatment, mr.prescription, mr.record_date
FROM medical_records mr
WHERE mr.patient_id = :patient_id;
```

**Query 3: Find the total amount billed to a specific patient:**

```
SELECT SUM(b.total_amount) AS total_billed
FROM billing b
WHERE b.patient_id = :patient_id;
```

**Query 4: List all available rooms of a specific type:**

```
SELECT r.room_number
FROM rooms r
WHERE r.type = :room_type
      AND r.status = 'available';
```

**Query 5: Calculate the average length of stay for patients in the hospital:**

```
SELECT AVG(DATEDIFF(ra.discharge_date, ra.assignment_date)) AS
average_length_of_stay
FROM room_assignments ra;
```

**Query 6: List all patients currently admitted to the hospital:**

```
SELECT p.full_name, ra.assignment_date, r.room_number, r.type
FROM room_assignments ra
JOIN patients p ON ra.patient_id = p.id
JOIN rooms r ON ra.room_id = r.id
WHERE ra.discharge_date IS NULL;
```