

**Manikandan  
-SQL Project**

# **Hospital Management System**

<https://www.linkedin.com/in/manikandan-t-6089a9226>



# Scenario:

A patient will have a unique Patient ID. Full description about the patient about personal detail and phone number, and then Disease and what treatment is going on. The doctor will handle patients, one doctor can Treat more than 1 patient. Also, each doctor will have a unique ID. Doctor and Patients will be related. Patients can be admitted to the hospital. So different room numbers will be there, also rooms for Operation Theaters and ICU. There are some nurses, and ward boys for the maintenance of the hospital and for patient take care. Based upon the number of days and treatment bill will be generated.





# Key Modules

Patients, Doctors, Treatments, Rooms,  
OperationTheaters, ICUs, Nurses, WardBoys,  
Bills.

- All modules work together for accuracy, speed, and quality care.



# Common Problems



Duplicate Patient Entries

Inconsistent Doctor-Patient Assignment

Missing Nurse or Ward Boy Assignments

Room Allocation Conflicts

# Solutions

## Duplicate Patient Entries

Use a unique constraint on Patient ID.

Use checks like phone number + name + DOB to avoid duplication.



`CREATE UNIQUE INDEX  
idx_patient_unique ON  
Patients(phone_number, name, dob);`

# Solutions

## Inconsistent Doctor-Patient Assignment

Create a proper foreign key relationship between Treatments and Doctors with one-to-many logic.



Use a junction table if multiple doctors can treat the same patient.

```
ALTER TABLE Treatments ADD  
CONSTRAINT fk_doctor_id FOREIGN  
KEY (doctor_id) REFERENCES  
Doctors(doctor_id);
```

# Solutions

## Missing Nurse or Ward Boy Assignments



Create a staff assignment table to map patients with nurses and ward boys.

Use scheduling logic to rotate staff across shifts.

# Solutions

## Room Allocation Conflicts

Add a status column to rooms (occupied, available).

Before assigning a room, check its availability.



`SELECT room_id FROM Rooms WHERE status = 'available' LIMIT 1;`

# Entity Spotlight – Patients

**Patients:** Each patient has a unique Patient ID, with details like name, age, gender, phone number, address, disease, and current treatment.

Tracks admission status and assigned doctor.



*A patient isn't just a name on paper; our system remembers everything that matters.*

# The Healers – Doctors

**Doctor:** Unique ID

Specialization and contact info

One doctor can treat many patients

## Treatment Timeline

Track diseases and treatments

Records treatment start and end

Links doctor → patient → treatment



“

*One doctor, many lives—one system to support them all.”*

# The Silent Heroes – Support Staff

## Nurses & Ward Boys:

Assigned by room and shift

Critical to care and cleanliness

# The Money Map – Billing

Based on treatment cost, room charges,  
and stay duration

Links to patient and treatment IDs

Automated, clear, fast



“

*Care doesn't end with doctors—it lives  
in every helping hand.”*

# What Makes It Unique

01



Modular and  
scalable

02



Staff + Rooms  
tracking

03



Personalized  
billing

04



Extendable to  
pharmacy,  
appointments,  
analytics

# Conclusion

We designed a system not just for hospitals, but for better healthcare.

Accurate



Future-ready



Efficient

Saving time, saving effort—and maybe, saving lives.

**Thank You!!!**