

Project Proposal

HOSPITAL MANAGEMENT SYSTEM

Guided By:

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➤ Introduction:

The Hospital Management System is a simple and smart software that helps a hospital manage its daily work in an organized way. It keeps important information in one place such as patient details, doctor information, appointments, admissions, rooms, and billing. This system reduces paperwork, saves time, avoids mistakes, and makes the entire hospital process faster and smoother.

➤ Objectives:

- ♣ To store and manage patient information safely.
- ♣ To maintain proper records of doctors and their specialization.
- ♣ To make appointment booking easier and faster.
- ♣ To handle patient admission and room allotment without confusion.
- ♣ To calculate patient bills quickly and accurately
- ♣ To reduce manual work and improve hospital efficiency.
- ♣ To make the hospital process more reliable and user-friendly

➤ Project Category:

Database Management System (DBMS) using Java, JDBC, and MySQL

➤ **Analysis:**

Modules and Description:

➤ **Patient Module:**

- ♣ Stores patient personal details
- ♣ Manages age, gender, and contact info
- ♣ Helps identify and track patients
- ♣ Provides data for admission & billing

➤ **Doctor Module:**

- ♣ Stores doctor's name and specialization
- ♣ Tracks availability and contact details
- ♣ Maintains consultation fee records
- ♣ Supports appointment scheduling

➤ **Appointment Module:**

- ♣ Allows patients to book appointments
- ♣ Stores appointment date and doctor info
- ♣ Ensures doctor–patient scheduling
- ♣ Prevents double-booking or conflicts

➤ **Room Module:**

- ♣ Shows available and occupied rooms
- ♣ Maintains room type and bed count
- ♣ Updates room status on admission
- ♣ Helps allocate rooms efficiently

➤ **Admission Module:**

- ♣ Records patient admission details
- ♣ Stores assigned room and dates
- ♣ Tracks stay duration in hospital
- ♣ Updates room and billing status

➤ **Billing Module:**

- ♣ Calculates total medical charges
- ♣ Adds doctor fees, room rent, services
- ♣ Stores paid amount and balance
- ♣ Generates final bill for discharge

➤ **Database Design:**

Hospital Management System - Database Tables

1. PATIENT TABLE:

Field Name	Data Type	Key	Description
patient_id	INT AUTO_INCREMENT T	PK	Unique patient ID
name	VARCHAR(100)		Patient full name

age	INT	Patient age
gender	VARCHAR(10)	Gender
mobile	VARCHAR(15)	Contact number
address	VARCHAR(200)	Full address

2. DOCTOR TABLE

Field Name	Data Type	Key	Description
doctor_id	INT AUTO_INCREMENT	PK	Unique doctor ID
name	VARCHAR(100)		Doctor name
specialization	VARCHAR(100)		Field of specialization
mobile	VARCHAR(15)		Contact number
fees	INT		Consultation fee

3. APPOINTMENT TABLE:

Field Name	Data Type	Key	Description

appointment_id	INT AUTO_INCREMENT	PK	Unique appointment ID
patient_id	INT	FK	References patient(patient_id)
doctor_id	INT	FK	References doctor(doctor_id)
appointment_date	DATE		Date of appointment
problem_description	VARCHAR(200)		Patient problem details

4. ROOM TABLE:

Field Name	Data Type	Key	Description
room_id	INT AUTO_INCREMENT	PK	Unique room ID
room_type	VARCHAR(50)		General / ICU / Private
bed_count	INT		Total beds
status	VARCHAR(20)		Available / Occupied

5. ADMISSION TABLE:

Field Name	Data Type	Key	Description
admission_id	INT AUTO_INCREMENT T	PK	Unique admission ID
patient_id	INT	FK	References patient(patient_id)
room_id	INT	FK	References room(room_id)
admit_date	DATE		Patient admission date
discharge_date	DATE		Patient discharge date

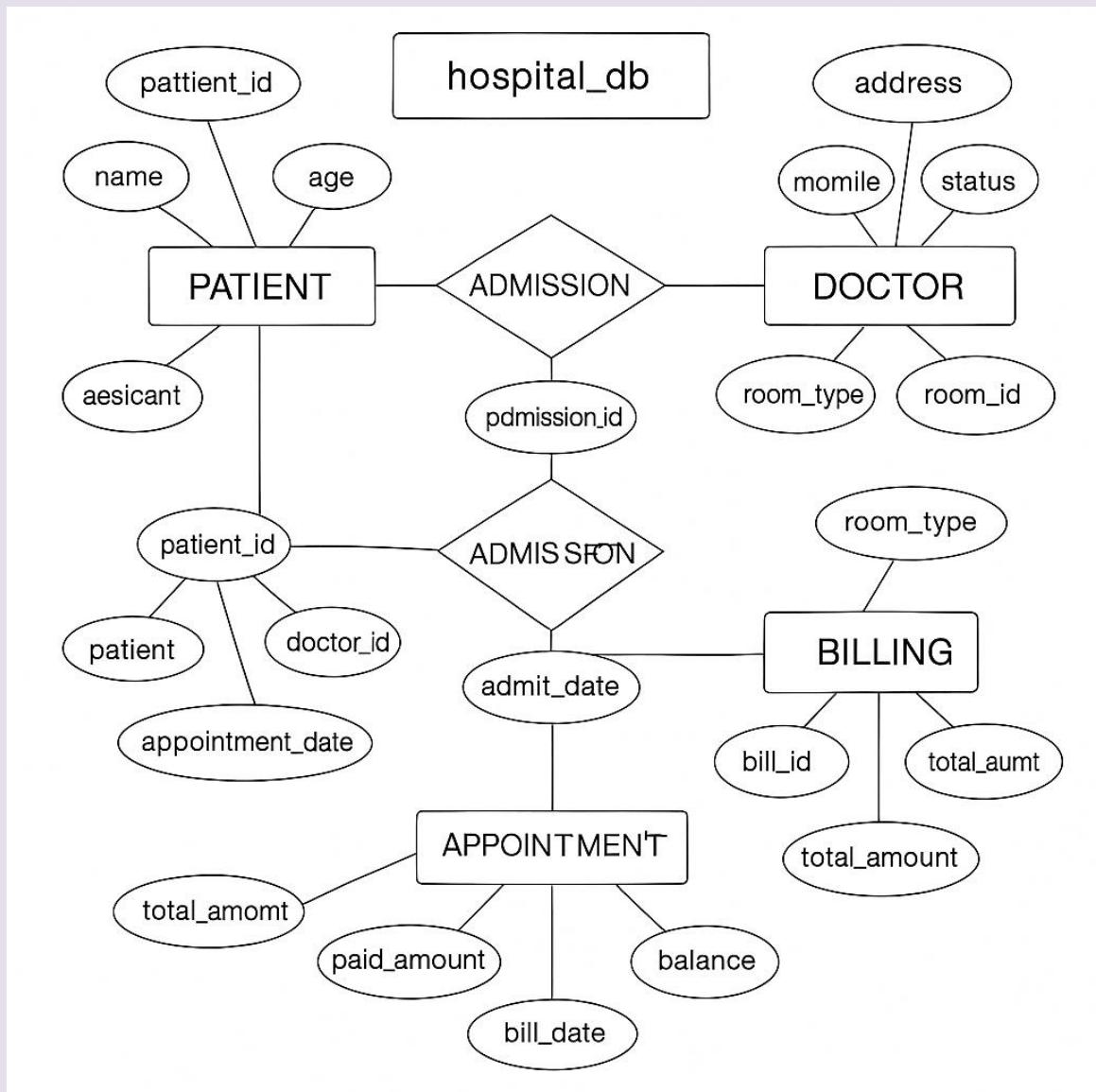
6. BILLING TABLE:

Field Name	Data Type	Key	Description
bill_id	INT AUTO_INCREMENT T	PK	Unique bill ID
patient_id	INT	FK	References patient(patient_id)
total_amount	INT		Total bill amount

paid_amount	INT	Amount paid
balance	INT	Remaining balance
bill_date	DATE	Bill generation date

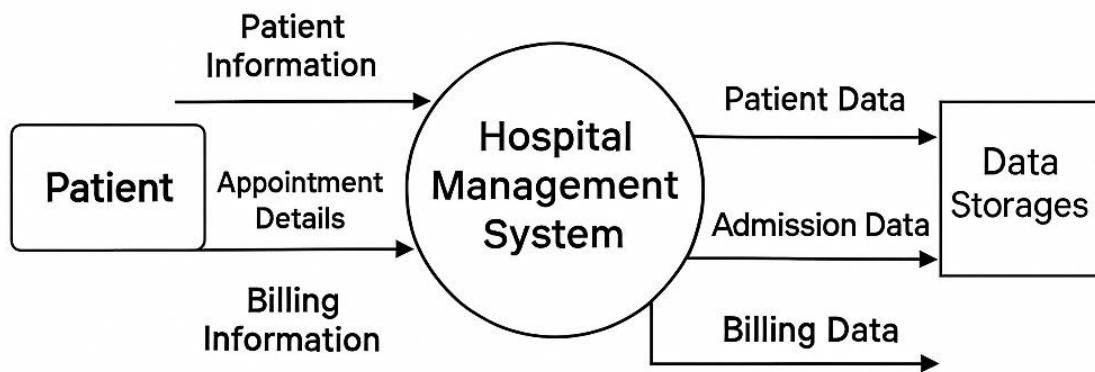
➤ ER Diagram:

- One Patient can have many Appointments.
- One Doctor can have many Appointments.
- One Patient can be admitted multiple times.
- One Room can be assigned many times.
- One Patient can have multiple Billing entries.



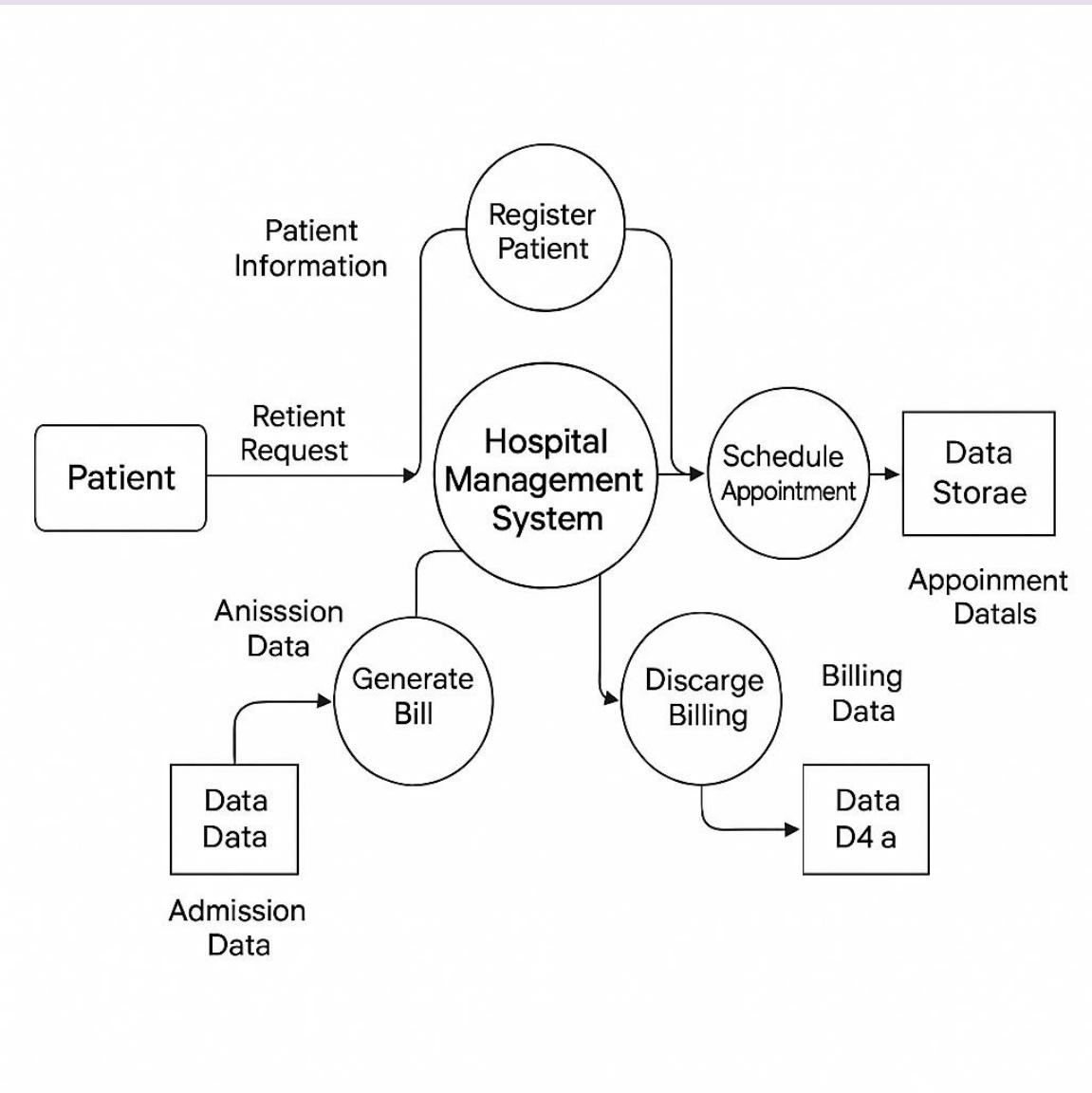
➤ Data Flow Diagram (DFD):

◆ **Level 0:** Shows interaction between Patient, Doctor, Admin and Hospital System.

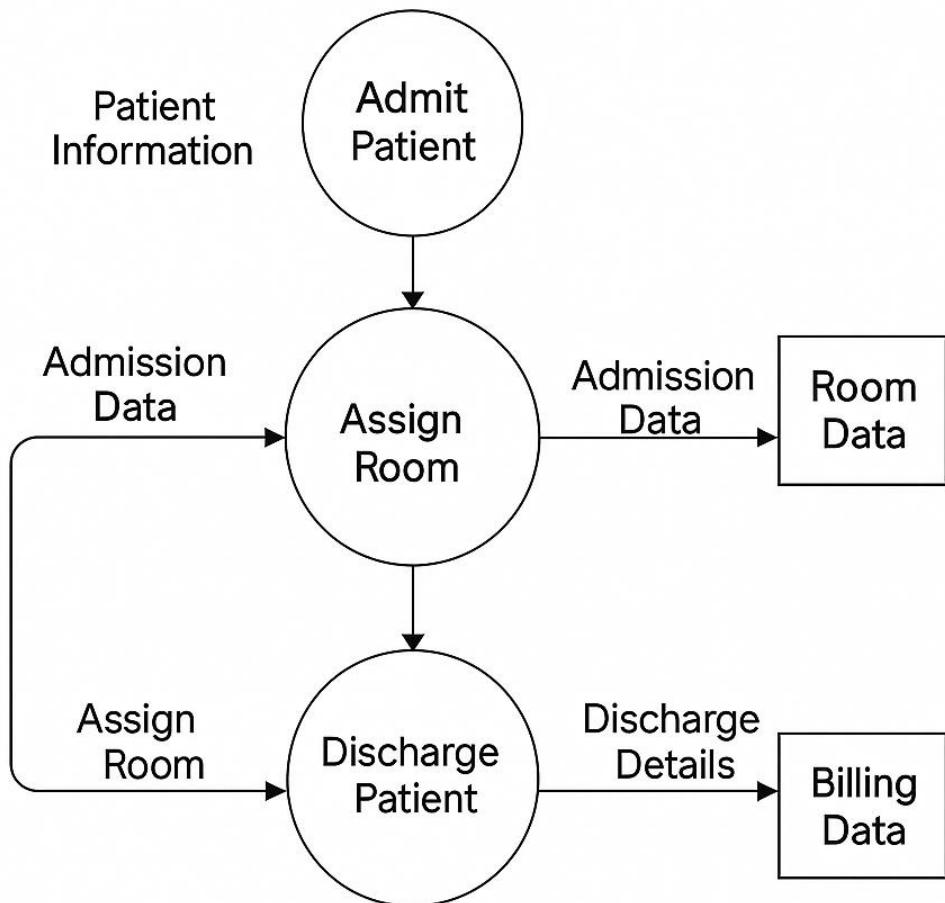


Level-0

◆ **Level 1:** Shows functions like Registration, Appointment, Admission and Billing.



◆ **Level 2:** Shows detailed internal working of each process.



➤ Complete Structure:

- Patient registers
- Books appointment
- Meets doctor
- Gets admitted if required
- Room allotted
- Bill generated
- Discharge

➤ **Platform Used:**

♣ **Hardware Requirements:**

- 4 GB RAM
- 1.5 GHz or higher processor
- 500 MB free disk space

♣ **Software Requirements:**

- Windows / Linux OS
- MySQL Database & Workbench
- Java (JDK 8 or above)
- JDBC Connector
- Eclipse / IntelliJ / NetBeans

➤ **Future Scope:**

- ◆ Online appointment booking.
- ◆ SMS alerts for reminders and updates.
- ◆ Separate login panels for admin, doctor, and staff.
- ◆ Pharmacy and lab test modules.
- ◆ Online payment and e-billing support.
- ◆ Cloud-based backup and data security.

➤ **Bibliography:**

- ❖ MySQL Official Documentation
- ❖ Java Documentation
- ❖ JDBC Reference Materials

