Project Proposal
On
Hospital Management System

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Hospital Management System - Complete Project Report

Title of the Project

Hospital Management System

Introduction

The Hospital Management System (HMS) is a computerized system designed to simplify and digitalize the internal processes of a hospital. It manages essential data such as patients, doctors, staff, medicines, and appointments. Manual hospital operations involve large volumes of paperwork which often lead to errors and delays. HMS eliminates these issues by providing a centralized and efficient database system that improves data accuracy, reduces time consumption, and enhances patient service quality.

Objective

The main objectives of this project are:
- To maintain accurate patient records and medical information
- To handle doctor details, specializations, and availability
- To manage staff roles and their activities efficiently
- To automate appointment scheduling between patients and doctors
- To track medicine inventory, stock levels, and expiry dates
- To ensure quick data retrieval and generate useful reports
- To reduce manual workload and human errors
- To streamline hospital operations through a user-friendly system

Project Category

Database Management System (DBMS) Application

Analysis - Modules and Description

1. Patient Module – Manages patient information such as personal details, medical history, and treatment details.
2. Doctor Module – Stores doctor details including specialization, experience, and availability.
3. Staff Module – Maintains information about nurses, technicians, and administrative staff.
4. Medicine Module – Tracks medicine stock, expiry dates, suppliers, and usage.
5. Appointment Module – Manages appointments between patients and doctors with status updates.

Database Design

Database Tables:

- PATIENT Table Design

Fields	Datatypes	Properties
Patient_Id	varchar(50)	Primary key ,not null
Name	varchar(100)	not null
Age	int	not null
Gender	varchar(10)	not null
Phone no	int	not null

- DOCTOR Table Design

Fields	Datatypes	Properties
Doctor_Id	varchar(50)	Primary key ,not null
Name	varchar(100)	not null
Specialty	varchar(100)	not null
Gender	varchar(10)	not null
Phone no	int	not null

- APPOINTMENTS Table Design

Fields	Datatypes	Properties
Appointment_ID	int	primary key,not null
Patient_ID	varchar(50)	not null
Doctor_ID	varchar(50)	not null
Appointment_date	date	not null

- MEDICINES Table Design

Fields	Datatypes	Properties
Id	varchar(50)	primary key , not null
Name	varchar(50)	not null
Cost	int	not null
Details	varchar(100)	not null

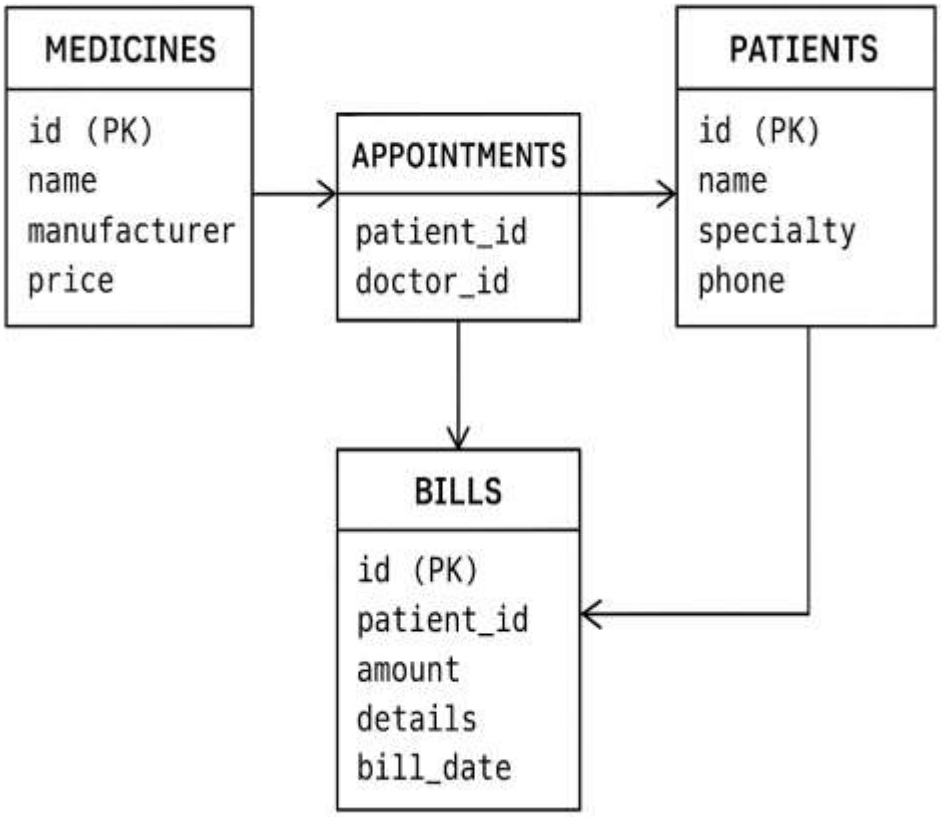
- BILLS Table Design

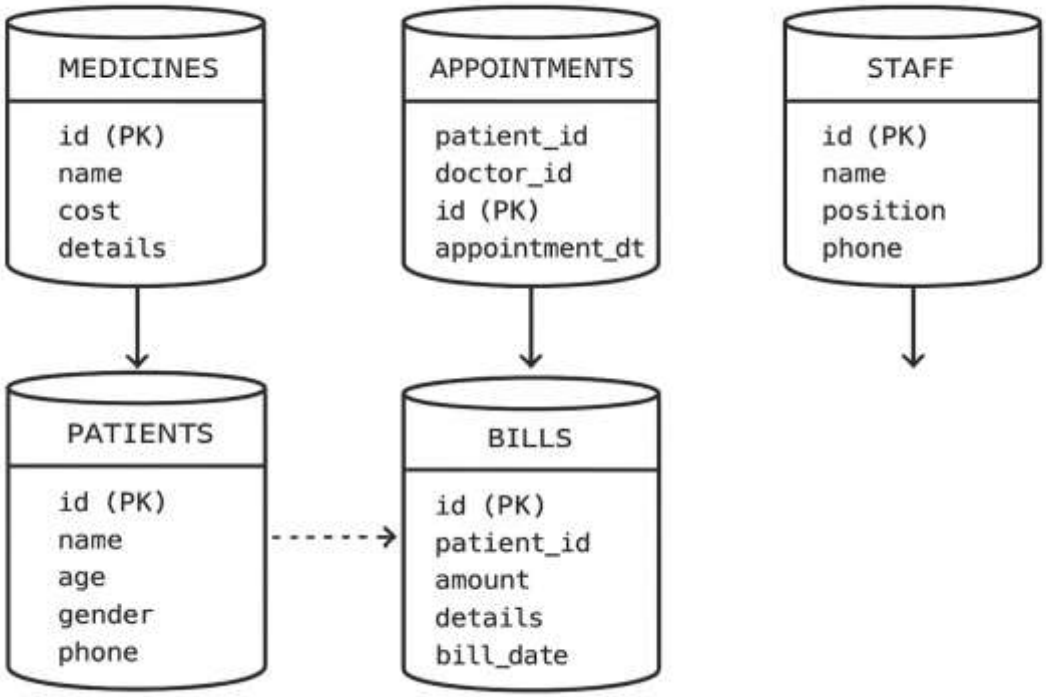
Fields	Datatypes	Properties
Id	varchar(50)	primary key , not null
Patient_id	varchar(50)	not null
Amount	int	not null
Details	varchar(100)	not null
Bill_date	date	not null

- STAFF table design

Fields	Datatypes	Properties
Staff_Id	int	Primary key ,not null
Name	varchar(100)	not null
Specialty	varchar(50)	not null
Gender	varchar(10)	not null
Phone no	int	not null

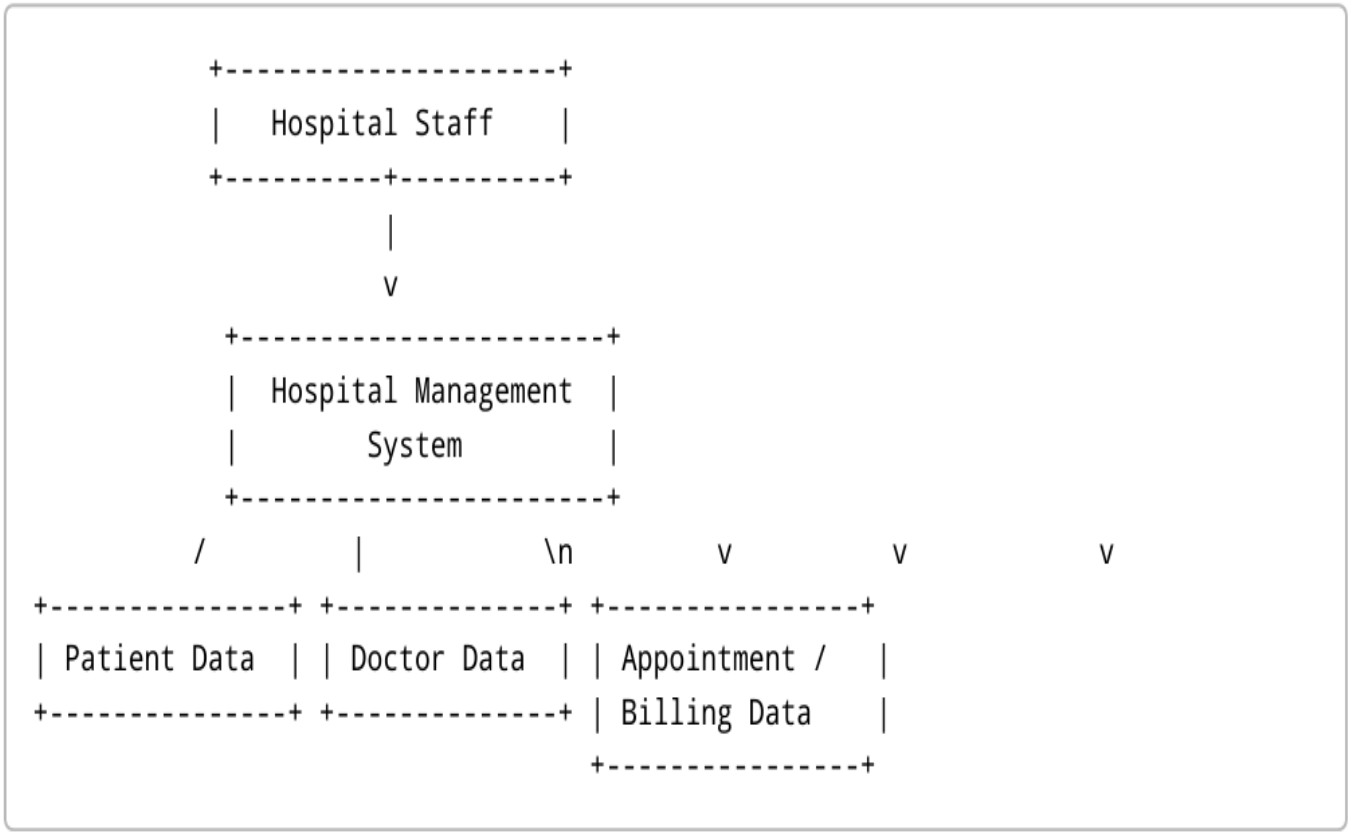
ER Diagram


MEDICINES
id (PK)
name
manufacturer
price
APPOINTMENTS
patient_id
doctor_id
PATIENTS
id (PK)
name
specialty
phone
BILLS
id (PK)
patient_id
amount
details
bill_date

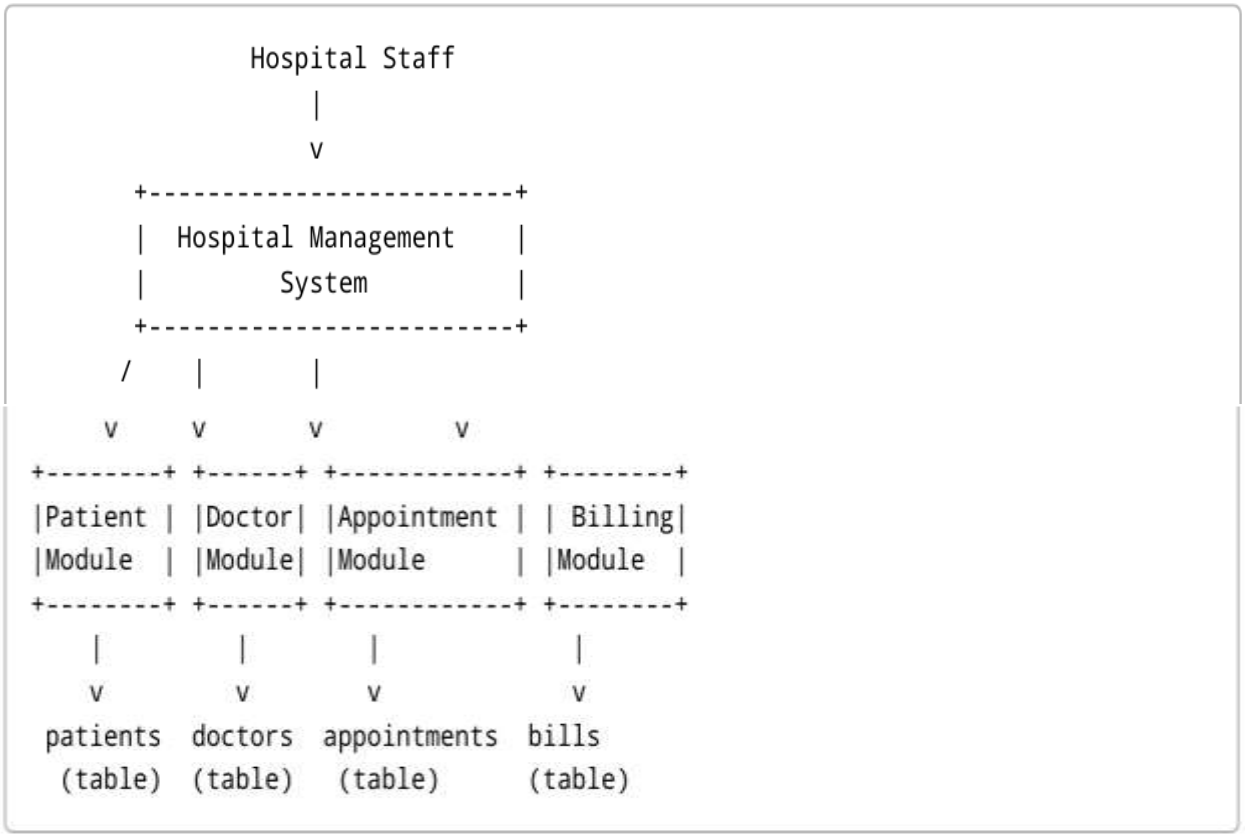

MEDICINES
id (PK)
name
cost
details
APPOINTMENTS
patient_id
doctor_id
id (PK)
appointment_dt
STAFF
id (PK)
name
position
phone
PATIENTS
id (PK)
name
age
gender
phone
BILLS
id (PK)
patient_id
amount
details
bill_date

Data Flow Diagram (DFD)

5.1 Data Flow Diagram (DFD – Level 0)



5.2 Data Flow Diagram (DFD – Level 1)



Complete Structure - Process Logical Diagram

Patient □ Appointment □
Doctor Doctor □ Treatment
□ Medicine
Staff □ Support Tasks □ Patient Care

Platform Used - Hardware Requirements

- Processor: Dual Core or higher
- RAM: Minimum 4GB
- Hard Disk: 500GB or more
- Display: Standard Monitor

Platform Used - Software Requirements

- Operating System: Windows / Linux
- Database: MySQL / SQL Server
- Frontend: Java / Python / PHP / .NET
- Tools: XAMPP / VS Code / Eclipse

Future Scope

- Online appointment and patient portal
- Billing and insurance integration
- SMS/Email alerts
- Online prescription and medical reports
- Mobile app integration
- AI-based diagnosis support

Bibliography

- Database System Concepts – Silberschatz
- Fundamentals of DBMS – Korth
- Online documentation and technical references
- Software Engineering Guides