Case Study:- Hospital Database Management System

**WE CARE EVERYONE**



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Subject: Data Concepts

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**1.Introduction**

The project Hospital Management system includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy, and labs. The software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current status of each room. User can search availability of a doctor and the details of a patient using the id. The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast. Hospital Management System is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals.

**2. Mission**

The mission is to build a smart and secure hospital management platform that enhances patient experiences, facilitates smooth doctor-patient interactions, tracks medical history, and ensures accurate billing and inventory management. It will generate detailed reports to support hospital operations and improve healthcare services.

**3.Objectives**

1. **Efficient Patient Management** – Ensuring that patient records, treatment plans, and histories are well-organized and easily accessible to improve healthcare delivery.
2. **Streamlined Employee Management** – Managing hospital staff efficiently by tracking work schedules, duties, and performance to enhance productivity and service quality.
3. **Patient Appointment Scheduling** – Implementing an effective system for booking, rescheduling, and managing patient appointments to reduce wait times and improve hospital workflow.
4. **Effective Inventory & Equipment** – Ensuring proper tracking and management of medical supplies, drugs, and hospital equipment to avoid shortages and wastage.
5. **Accurate & Transparent Billing** – Establishing a reliable billing system that ensures patients are correctly charged, reduces errors, and enhances financial transparency.
6. **Optimized Department Management** – Improving coordination between different hospital departments to ensure smooth operations, better patient care, and resource utilization.

**4.Database Design**

**4.1 Tables Field and Data Dictionary**

1.Department\_Info table:

A white and blue rectangular box with black text

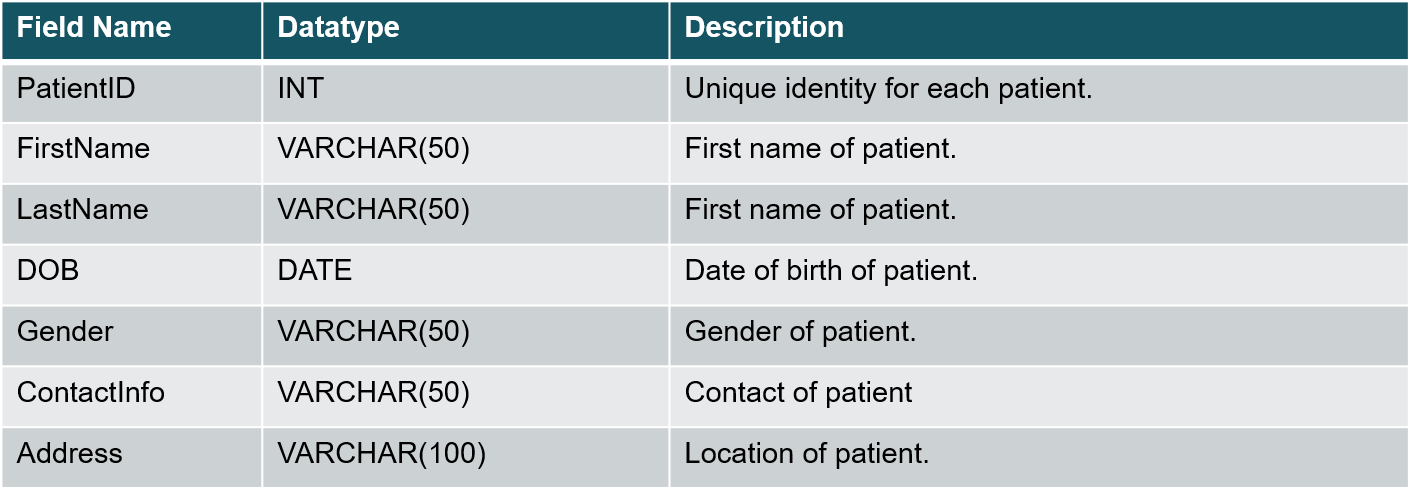
Description automatically generated

2.Employee\_Details table:

A table with text on it

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3.Patient\_Details table:



4.Patient\_Appointments table:

A table with text on it

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5.Service\_Table:

A table with text on it

Description automatically generated

6.Stock\_Details table:

A table with text and numbers

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7.Invoice\_Details table:

A table with text and numbers

Description automatically generated

**4.2 Relationships**

In database management, relationships define how tables are connected to each other. The three main types of relationships are One-to-One (1:1), One-to-Many (1:M), and Many-to-Many (M:N). Here’s a detailed explanation of each:

1. One-to-One (1:1) Relationship:

A one-to-one relationship means that one record in Table A is related to only one record in Table B, and vice versa.

1. One-to-Many (1:M) Relationship:

In a one-to-many relationship, one record in Table A can be related to multiple records in Table B, but each record in Table B is related to only one record in Table A.

1. Many-to-Many (M:N) Relationship:

A many-to-many relationship means that multiple records in Table A can be related to multiple records in Table B.

**4.3 ER Diagram**

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**5. Database Development**

5.1 Create Database

Input:

**CREATE DATABASE test3;**

5.2 Create tables and insert data in tables

Input:

**-- Create Table: Department\_Info**

**CREATE TABLE Department\_Info (**

**DepartmentID INT PRIMARY KEY,**

**Department\_Name VARCHAR(100)**

**);**

**-- Insert Data into Department\_Info**

**INSERT INTO Department\_Info (DepartmentID, Department\_Name) VALUES**

**(101, 'Cardiology'),**

**(102, 'Neurology'),**

**(103, 'Pediatrics'),**

**(104, 'Radiology'),**

**(105, 'Emergency');**

Output:

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5.3 Join Query

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1. **Conclusion**

The Hospital Management System is a powerful solution that can help hospitals improve their operations, enhance patient satisfaction, and boost revenue. Its user-friendly interface and intuitive workflows make it easy for healthcare professionals to access and manage patient information, track resources, and optimize resource utilization. With its robust reporting and analytics capabilities, hospitals can gain insights into their performance and make data-driven decisions to drive continuous improvement.