

Hospital Administration System (MySQL)

Objective

The objective of this task is to simulate a real hospital administration database using MySQL.

Role

You are working as a Junior SQL Developer in a hospital. The hospital wants a database system to manage:

- *Departments*
- *Doctors*
- *Patients*
- *Appointments*
- *Billing*

Dataset Information (Excel File)

You are provided with an Excel dataset containing the following sheets:

- *Departments*
- *Doctor*
- *Patients*
- *Appointments*
- *Billing*

Database Creation

Create a database named hospital_db

Table Design

Create the following tables with proper primary keys and foreign keys:

- **Departments**
 - department_id (Primary Key)
 - department_name
- **Doctors**
 - doctor_id (Primary Key)
 - doctor_name
 - specialization
 - department_id (Foreign Key)
 - phone
- **Patients**
 - patient_id (Primary Key)
 - patient_name
 - age

- gender
- phone
- **Appointments**
 - appointment_id (Primary Key)
 - patient_id (Foreign Key)
 - doctor_id (Foreign Key)
 - appointment_date
 - appointment_time
 - status (Completed / Pending / Cancelled)

- **Billing**
 - bill_id (Primary Key)
 - patient_id (Foreign Key)
 - amount
 - bill_date
 - payment_status (Paid / Unpaid)

Data Import

Insert data from the Excel sheets into the corresponding MySQL tables and verify data using SELECT queries

Business Requirement Queries

- Write SQL queries for the following real-time requirements
- Display all patients along with their doctor's name and specialization
- Show all appointments scheduled for today
- List doctors working in a specific department
- Find the total revenue collected from paid bills
- Display patients who have unpaid bills
- Count total appointments handled by each doctor
- Show department-wise doctor count

Update & Delete Operations

Update appointment status from Pending to Completed

Delete appointments that are cancelled

Update billing status once payment is done

Advanced SQL (For Extra Credit)

Use a subquery to find patients whose bill amount is above average

Use GROUP BY & HAVING to find doctors who handled more than one appointment

Display the highest bill amount paid