Hospital Management System - SQL Project

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Project Overview

The Hospital Management System project uses SQL to manage patient records, doctors, and appointments. It helps in organizing data, scheduling appointments, and understanding patient care through structured queries and relational design.

ER Diagram (Text Representation)

```
[Patients] -------< [Appointments] >------- [Doctors]
     |                    |                      |
patient_id          patient_id (FK)       doctor_id (FK)
name                doctor_id (FK)        name
age                 date                  specialization
gender              time
disease
```

Table Creation SQL

```
CREATE TABLE Patients (
    patient_id INT PRIMARY KEY,
    name VARCHAR(100),
    age INT,
    gender VARCHAR(10),
    disease VARCHAR(100)
);

CREATE TABLE Doctors (
    doctor_id INT PRIMARY KEY,
    name VARCHAR(100),
    specialization VARCHAR(100)
);

CREATE TABLE Appointments (
    appointment_id INT PRIMARY KEY,
```

```
    patient_id INT,
    doctor_id INT,
    date DATE,
    time TIME,
    FOREIGN KEY (patient_id) REFERENCES Patients(patient_id),
    FOREIGN KEY (doctor_id) REFERENCES Doctors(doctor_id)
);
```

Sample SQL Queries

```
-- Show appointments with patient and doctor names
SELECT a.date, a.time, p.name AS patient, d.name AS doctor
FROM Appointments a
JOIN Patients p ON a.patient_id = p.patient_id
JOIN Doctors d ON a.doctor_id = d.doctor_id;

-- Count appointments per doctor
SELECT d.name, COUNT(*) AS total_appointments
FROM Appointments a
JOIN Doctors d ON a.doctor_id = d.doctor_id
GROUP BY d.name;

-- Patients having fever
SELECT name FROM Patients WHERE disease = 'Fever';
```

Conclusion

This project reflects how hospitals can use relational databases to manage essential data. By connecting patient records with doctors and appointment schedules, the system provides an efficient workflow to track and organize hospital activities.