

Hospital Information System

Objective:

To design a database to manage hospital information efficiently — including patients, doctors, appointments, treatments, and billing.

Database Tables:

1■■■ Table: Doctor

```
CREATE TABLE Doctor (DoctorID NUMBER(5) PRIMARY KEY, DoctorName VARCHAR2(50),  
Specialization VARCHAR2(30), Phone VARCHAR2(15), City VARCHAR2(30));
```

2■■■ Table: Patient

```
CREATE TABLE Patient (PatientID NUMBER(5) PRIMARY KEY, PatientName VARCHAR2(50),  
Gender CHAR(1), Age NUMBER(3), Phone VARCHAR2(15), City VARCHAR2(30));
```

3■■■ Table: Appointment

```
CREATE TABLE Appointment (AppointmentID NUMBER(5) PRIMARY KEY, PatientID  
NUMBER(5), DoctorID NUMBER(5), AppointmentDate DATE, Disease VARCHAR2(50), FOREIGN  
KEY (PatientID) REFERENCES Patient(PatientID), FOREIGN KEY (DoctorID) REFERENCES  
Doctor(DoctorID));
```

4■■■ Table: Billing

```
CREATE TABLE Billing (BillNo NUMBER(5) PRIMARY KEY, PatientID NUMBER(5), BillDate  
DATE, Amount NUMBER(10,2), PaymentMode VARCHAR2(20), FOREIGN KEY (PatientID)  
REFERENCES Patient(PatientID));
```

Sample Data:

Sample INSERT statements for each table.

Useful Queries:

List all patients and their doctors

```
SELECT p.PatientName, d.DoctorName, d.Specialization FROM Patient p JOIN Appointment  
a ON p.PatientID = a.PatientID JOIN Doctor d ON a.DoctorID = d.DoctorID;
```

Find patients treated by Dr. Raj Kumar

```
SELECT p.PatientName, a.Disease FROM Patient p JOIN Appointment a ON p.PatientID =  
a.PatientID JOIN Doctor d ON a.DoctorID = d.DoctorID WHERE d.DoctorName = 'Dr. Raj  
Kumar';
```

Show total billing amount for all patients

```
SELECT SUM(Amount) AS Total_Revenue FROM Billing;
```

Find highest bill paid by any patient

```
SELECT MAX(Amount) AS Highest_Bill FROM Billing;
```

Display all appointments on 18-Oct-2025

```
SELECT * FROM Appointment WHERE AppointmentDate = '18-OCT-2025';
```

Trigger Example:

```
CREATE OR REPLACE TRIGGER check_amount BEFORE INSERT OR UPDATE ON Billing FOR EACH
ROW BEGIN IF :NEW.Amount < 0 THEN RAISE_APPLICATION_ERROR(-20001, 'Bill amount
cannot be negative'); END IF; END;
```

Sample Output:

PatientName	DoctorName	Specialization
Amit Verma	Dr. Meera Sharma	Cardiology
Neha Gupta	Dr. Raj Kumar	Orthopedic
Ravi Singh	Dr. Priya Nair	Pediatrics

Conclusion:

The Hospital Information System efficiently manages data related to doctors, patients, appointments, and billing using SQL queries, joins, and triggers in Oracle SQL Plus.