--Inserting Records

INSERT INTO Patient VALUES

(101,'Arun', 'Kumar', DATE '2005-07-01', 'M', '9876543210', 'Chennai'),

(102,'Divya','Ramesh', DATE '1990-05-03', 'F', '9823123456', 'Coimbatore'),

(103,'Suresh','Menon', DATE '1972-03-11', 'M', '9845012345', 'Madurai'),

(104,'Priya', 'Nair', DATE '2000-08-01', 'F', '9888011122', 'Salem');

INSERT INTO Doctor VALUES

(1001,'Anita', 'George', 'Cardiologist','9876543211'),

(1002,'Rahul', 'Varma', 'Neurologist','9833224455'),

(1003,'Meena', 'Singh', 'General Physician','9812345678');

INSERT INTO Appointment  VALUES

(1,101,1001,  DATE '2025-06-10', '10:00 AM', 'Routine Checkup'),

(2,102,1002,  DATE '2025-06-11', '11:30 AM', 'Headache'),

(3,103,1003, DATE '2025-06-12', '12:00 PM', 'Chest Pain'),

(4,104,1003, DATE '2025-06-13', '09:30 AM', 'Fever and cold');

INSERT INTO Treatment VALUES

(1,1,'Mild Hypertension', 'Advised lifestyle changes'),

(2,2,'Migraine', 'Prescribed medication'),

(3,3,'Angina', 'Referred for angiogram'),

(4,4,'Viral Infection', 'Prescribed rest and meds');

INSERT INTO Billing VALUES

(500,101,DATE '2025-06-15', 7800.00, 'Paid'),

(501,102,DATE '2025-06-13', 3500.00, 'Unpaid'),

(502,103,DATE '2025-06-14', 9800.00, 'Paid');

CREATE SEQUENCE Appointment\_seq START WITH 5;

set SERVEROUTPUT on

CREATE OR REPLACE PROCEDURE Add\_Appointment (

    p\_PatientID IN NUMBER,

    p\_DoctorID IN NUMBER,

    p\_ApptDate IN DATE,

    p\_TimeSlot IN VARCHAR2,

    p\_Reason IN VARCHAR2

)

IS

BEGIN

    INSERT INTO Appointment (ApptID, PatientID, DoctorID, ApptDate, TimeSlot, Reason)

    VALUES (Appointment\_seq.NEXTVAL, p\_PatientID, p\_DoctorID, p\_ApptDate, p\_TimeSlot, p\_Reason);

    DBMS\_OUTPUT.PUT\_LINE('Appointment successfully added.');

EXCEPTION

    WHEN OTHERS THEN

        DBMS\_OUTPUT.PUT\_LINE('Error: ' || SQLERRM);

END;

set SERVEROUTPUT on

BEGIN

  Add\_Appointment(

    p\_PatientID => 102,

    p\_DoctorID => 1002,

    p\_ApptDate => DATE '2025-07-04',

    p\_TimeSlot => '10:00 AM',

    p\_Reason => 'Regular Visit'

  );

END;

select \* from Appointment;

--Triggers --

CREATE TABLE PatientAudit (

    AuditID NUMBER GENERATED ALWAYS AS IDENTITY PRIMARY KEY,

    PatientID INT,

    OldContactNo VARCHAR2(15),

    NewContactNo VARCHAR2(15),

    ChangeDate DATE,

    ChangedBy VARCHAR2(30)

);

CREATE OR REPLACE TRIGGER trg\_patient\_contact\_update

AFTER UPDATE ON Patient

FOR EACH ROW

WHEN (OLD.ContactNo <> NEW.ContactNo)

BEGIN

    INSERT INTO PatientAudit (PatientID, OldContactNo, NewContactNo, ChangeDate, ChangedBy)

    VALUES (:OLD.PatientID, :OLD.ContactNo, :NEW.ContactNo, SYSDATE, USER);

END;

-- UPDATE Patient to fire trigger

UPDATE Patient

SET ContactNo = '7800082300'

WHERE PatientID = 102;

SELECT \* from patient;

SELECT \* from PatientAudit;

-- Function: Calculate Total Bill for a Patient--

CREATE OR REPLACE FUNCTION fn\_TotalBill (p\_PatientID NUMBER)

RETURN NUMBER

IS

    v\_total NUMBER := 0;

BEGIN

    SELECT NVL(SUM(TotalAmount), 0)

    INTO v\_total

    FROM Billing

    WHERE PatientID = p\_PatientID;

    RETURN v\_total;

END;

SET SERVEROUTPUT ON;

DECLARE

  v\_total NUMBER;

BEGIN

  v\_total := fn\_TotalBill(103);

  DBMS\_OUTPUT.PUT\_LINE('Total bill for PatientID 1: ₹' || v\_total);

END;

--Exception Handling - Procedure to Add Billing Entry

CREATE OR REPLACE PROCEDURE Add\_Bill (

    p\_PatientID IN NUMBER,

    p\_Amount IN NUMBER

)

IS

BEGIN

    IF p\_Amount <= 0 THEN

        RAISE\_APPLICATION\_ERROR(-20001, 'Billing amount must be greater than zero.');

    END IF;

    INSERT INTO Billing (PatientID, BillDate, TotalAmount, PaymentStatus)

    VALUES (p\_PatientID, SYSDATE, p\_Amount, 'Pending');

    DBMS\_OUTPUT.PUT\_LINE('Bill added successfully.');

EXCEPTION

    WHEN OTHERS THEN

        DBMS\_OUTPUT.PUT\_LINE('Error: ' || SQLERRM);

END;

--Cursor-Based Logic: List Patients with Appointments Today

DECLARE

    CURSOR cur\_today\_appts IS

        SELECT p.FirstName, p.LastName, a.TimeSlot

        FROM Patient p

        JOIN Appointment a ON p.PatientID = a.PatientID

        WHERE a.ApptDate = TRUNC(SYSDATE);

    v\_fname Patient.FirstName%TYPE;

    v\_lname Patient.LastName%TYPE;

    v\_slot Appointment.TimeSlot%TYPE;

BEGIN

    OPEN cur\_today\_appts;

    LOOP

        FETCH cur\_today\_appts INTO v\_fname, v\_lname, v\_slot;

        EXIT WHEN cur\_today\_appts%NOTFOUND;

        DBMS\_OUTPUT.PUT\_LINE(v\_fname || ' ' || v\_lname || ' - ' || v\_slot);

    END LOOP;

    CLOSE cur\_today\_appts;

END;

-- CURSOR

SET SERVEROUTPUT ON;

DECLARE

  CURSOR cur\_today\_appts IS

    SELECT p.FirstName, p.LastName, a.TimeSlot

    FROM Patient p

    JOIN Appointment a ON p.PatientID = a.PatientID

    WHERE a.ApptDate = DATE '2025-07-01';

  v\_fname Patient.FirstName%TYPE;

  v\_lname Patient.LastName%TYPE;

  v\_timeslot Appointment.TimeSlot%TYPE;

BEGIN

  OPEN cur\_today\_appts;

  LOOP

    FETCH cur\_today\_appts INTO v\_fname, v\_lname, v\_timeslot;

    EXIT WHEN cur\_today\_appts%NOTFOUND;

    DBMS\_OUTPUT.PUT\_LINE(v\_fname || ' ' || v\_lname || ' - ' || v\_timeslot);

  END LOOP;

  CLOSE cur\_today\_appts;

END;