

Exercise 1: Control Structures

PL/SQL CODE:

-- Scenario 1: Apply 1% interest discount for customers above 60 years

```
BEGIN
  FOR cust IN (SELECT CustomerID, DOB FROM Customers) LOOP
    IF MONTHS_BETWEEN(SYSDATE, cust.DOB) / 12 > 60 THEN
      UPDATE Loans
      SET InterestRate = InterestRate - 1
      WHERE CustomerID = cust.CustomerID;
    END IF;
  END LOOP;
  COMMIT;
END;
/
```

-- Scenario 2: Set IsVIP = 'Y' for customers with balance > 10000

```
BEGIN
  FOR cust IN (SELECT CustomerID, Balance FROM Customers) LOOP
    IF cust.Balance > 10000 THEN
      UPDATE Customers
      SET IsVIP = 'Y'
      WHERE CustomerID = cust.CustomerID;
    END IF;
  END LOOP;
  COMMIT;
END;
/
```

-- Scenario 3: Print loan due reminders within next 30 days

```
SET SERVEROUTPUT ON
BEGIN
  FOR loan IN (
    SELECT LoanID, CustomerID, EndDate
    FROM Loans
    WHERE EndDate BETWEEN SYSDATE AND SYSDATE + 30
```

PL/SQL EXERCISES

```
) LOOP
  DECLARE
    v_name VARCHAR2(100);
  BEGIN
    SELECT Name INTO v_name FROM Customers WHERE CustomerID = loan.CustomerID;

    DBMS_OUTPUT.PUT_LINE('Reminder: Dear ' || v_name || ', your loan (ID: ' || loan.LoanID || ') is due on ' ||
TO_CHAR(loan.EndDate, 'YYYY-MM-DD'));

    END;

  END LOOP;
END;
```

```
select * from Accounts;
select * from CUSTOMERS;
select * from Loans;
```

Scenario 1:

Loan Table:

Query result

Script output

DBMS output

Expla

core.util.apex_layout.resize

Download

Execution time: 0.005 seconds

	LOANID	CUSTOMERID	LOANAMOUNT	INTERESTRATE	STARTDATE	ENDDATE
1	2	3	7000	6	6/29/2025, 1:32:03	6/29/2029, 1:32:
2	3	4	8000	5.5	6/29/2025, 1:32:03	6/29/2028, 1:32:
3	4	6	3000	4.5	8/3/2024, 1:32:03 P	7/14/2025, 1:32:

Customer Table:

Query result

Script output

DBMS output

Explain Plan

SQL history

Download

Execution time: 0.001 seconds

	CUSTOMERID	NAME	DOB	BALANCE	LASTMODIFIED	ISVIP
1	4	Senior Two	10/10/1948, 12:00:00	2500	6/29/2025, 1:32:03	(null)
2	5	Richie Rich	11/11/1988, 12:00:00	20000	6/29/2025, 1:32:03	(null)
3	6	Soon Due	8/25/1975, 12:00:00	6000	6/29/2025, 1:32:03	(null)
4	1	John Doe	5/15/1985, 12:00:00	1000	6/29/2025, 1:14:03	(null)
5	2	Jane Smith	7/20/1990, 12:00:00	1500	6/29/2025, 1:14:03	(null)
6	3	Elder One	1/1/1950, 12:00:00	3000	6/29/2025, 1:32:03	(null)

PL/SQL EXERCISES

Output:

Loan Table

Query result						
Script output						
DBMS output						
Explain Plan						
SQL history						
Download Execution time: 0.001 seconds						
	LOANID	CUSTOMERID	LOANAMOUNT	INTERESTRATE	STARTDATE	ENDDATE
1	2	3	7000	5	6/29/2025, 1:32:03	6/29/2029, 1:32:03
2	3	4	8000	4.5	6/29/2025, 1:32:03	6/29/2028, 1:32:03
3	4	6	3000	4.5	8/3/2024, 1:32:03 P	7/14/2025, 1:32:03

Customer Table

Download Execution time: 0 seconds						
	CUSTOMERID	NAME	DOB	BALANCE	LASTMODIFIED	ISVIP
1	4	Senior Two	10/10/1948, 12:00:00	2500	6/29/2025, 1:32:03	(null)
2	5	Richie Rich	11/11/1988, 12:00:00	20000	6/29/2025, 1:32:03	(null)
3	6	Soon Due	8/25/1975, 12:00:00	6000	6/29/2025, 1:32:03	(null)
4	1	John Doe	5/15/1985, 12:00:00	1000	6/29/2025, 1:14:03	(null)
5	2	Jane Smith	7/20/1990, 12:00:00	1500	6/29/2025, 1:14:03	(null)
6	3	Elder One	1/1/1950, 12:00:00	3000	6/29/2025, 1:32:03	(null)

Scenario 2:

Customer Table:

Query result						
Script output						
DBMS output						
Explain Plan						
SQL history						
Download Execution time: 0.001 seconds						
	CUSTOMERID	NAME	DOB	BALANCE	LASTMODIFIED	ISVIP
1	4	Senior Two	10/10/1948, 12:00:00	2500	6/29/2025, 1:32:03	(null)
2	5	Richie Rich	11/11/1988, 12:00:00	20000	6/29/2025, 1:32:03	(null)
3	6	Soon Due	8/25/1975, 12:00:00	6000	6/29/2025, 1:32:03	(null)
4	1	John Doe	5/15/1985, 12:00:00	1000	6/29/2025, 1:14:03	(null)
5	2	Jane Smith	7/20/1990, 12:00:00	1500	6/29/2025, 1:14:03	(null)
6	3	Elder One	1/1/1950, 12:00:00	3000	6/29/2025, 1:32:03	(null)

OUTPUT:

Customer Table:

PL/SQL EXERCISES

	CUSTOMERID	NAME	DOB	BALANCE	LASTMODIFIED	ISVIP
1	4	Senior Two	10/10/1948, 12:00:00	2500	6/29/2025, 1:32:03	(null)
2	5	Richie Rich	11/11/1988, 12:00:00	20000	6/29/2025, 1:32:03	Y
3	6	Soon Due	8/25/1975, 12:00:00	6000	6/29/2025, 1:32:03	(null)
4	1	John Doe	5/15/1985, 12:00:00	1000	6/29/2025, 1:14:03	(null)
5	2	Jane Smith	7/20/1990, 12:00:00	1500	6/29/2025, 1:14:03	(null)
6	3	Elder One	1/1/1950, 12:00:00	3000	6/29/2025, 1:30:08	(null)

Scenario 3:

Loan Table:

	LOANID	CUSTOMERID	LOANAMOUNT	INTERESTRATE	STARTDATE	ENDDATE
1	2	3	7000	5	6/29/2025, 1:32:03	6/29/2029, 1:32:03
2	3	4	8000	4.5	6/29/2025, 1:32:03	6/29/2028, 1:32:03
3	4	6	3000	4.5	8/3/2024, 1:32:03 P	7/14/2025, 1:32:03

OUTPUT:

Reminder: Dear Soon Due, your loan (ID: 4) is due on 2025-07-14

PL/SQL procedure successfully completed.

Elapsed: 00:00:00.011