

CONTROL STRUCTURES :**EXERCISE 1 :**

Scenario 1: The bank wants to apply a discount to loan interest rates for customers above 60 years old.

Question: Write a PL/SQL block that loops through all customers, checks their age, and if they are above 60, apply a 1% discount to their current loan interest rates.

SELECT * FROM LOANS;

The screenshot shows an SQL IDE interface. On the left is a 'Navigator' pane with 'My Schema' and 'Tables' sections. The 'Tables' section lists ACCOUNTS, CUSTOMERS, EMPLOYEES, LOANS, and TRANSACTIONS. The main editor displays a PL/SQL block with the following code:

```

114 SELECT * FROM LOANS;
115
116 DECLARE
117
118 BEGIN
119
120   FOR cust IN ( SELECT * FROM Customers ) LOOP
121     IF TRUNC(MONTHS_BETWEEN(SYSDATE, cust.DOB) / 12) > 60 THEN
122       UPDATE LOANS
123         SET IntrestRate = IntrestRate - ( IntrestRate*0.01)
124         WHERE CustomerId = cust.CustomerId;
125     END IF;
126   END LOOP;
127
128 EXCEPTION
129   WHEN OTHERS THEN
130     DBMS_OUTPUT.PUT_LINE(' An Error Occured : ' || SQLERRM);
131

```

Below the code editor, the 'Query result' tab is active, showing the execution time as 0.009 seconds. The result is a table with 6 columns: LOANID, CUSTOMERID, LOANAMOUNT, INTRESTRATE, STARTDATE, and ENDDATE. The table contains 4 rows of data:

LOANID	CUSTOMERID	LOANAMOUNT	INTRESTRATE	STARTDATE	ENDDATE
1	1	5000	5	6/27/2025, 5:19:49	6/27/2030, 5:19:49
2	2	100000	6.435	6/27/2025, 6:34:29	6/27/2027, 6:34:29
3	3	200000	6.93	6/27/2025, 6:34:29	6/27/2028, 6:34:29
4	4	300000	7.92	6/27/2025, 6:34:29	6/27/2029, 6:34:29

Before applying a 1% discount to the interest rates for customers above the age of 60.

DECLARE

BEGIN

FOR cust IN (SELECT * FROM Customers) LOOP

IF TRUNC(MONTHS_BETWEEN(SYSDATE, cust.DOB)/12)>60 THEN

UPDATE LOANS

SET IntrestRate=IntrestRate-(IntrestRate*0.01)

WHERE CustomerId=cust.CustomerId;

END IF;

END LOOP;

EXCEPTION

WHEN OTHERS THEN

DBMS_OUTPUT.PUT_LINE(' An Error Occured : ' || SQLERRM);

END;

/

Procedural Language/Structured Query Language

SELECT * FROM LOANS;

NavigatorFiles

My Schema

Tables

Search objects

ACCOUNTS

CUSTOMERS

EMPLOYEES

LOANS

TRANSACTIONS

[SQL Worksheet]*

124WHERE CustomerId = cust.CustomerId;

125END IF;

126

127END LOOP;

128

129EXCEPTION

130WHEN OTHERS THEN

131DBMS_OUTPUT.PUT_LINE(' An Error Occured : ' ||SQLERRM);

132

133END;

134/

135

136SELECT * FROM LOANS;

137

138-- SCENARIO 2 :- A customer can be promoted to VIP status based on their balance.

139/*

140Question: Write a PL/SQL block that iterates through all customers and sets a flag IsVIP to TRUE for those with a balance over \$10,000.

141

142

Query result

Script output

DBMS output

Explain Plan

SQL history

Download

Execution time: 0.001 seconds

	LOANID	CUSTOMERID	LOANAMOUNT	INTRESTRATE	STARTDATE	ENDDATE
1	1	1	5000	5	6/27/2025, 5:19:49	6/27/2030, 5:19:49
2	2	3	100000	6.37065	6/27/2025, 6:34:29	6/27/2027, 6:34:29
3	3	4	200000	6.8607	6/27/2025, 6:34:29	6/27/2028, 6:34:29
4	4	5	300000	7.8408	6/27/2025, 6:34:29	6/27/2029, 6:34:29

Apply a 1% discount to the interest rates only for customers aged above 60.

Procedural Language/Structured Query Language

Scenario 2: A customer can be promoted to VIP status based on their balance.

Question: Write a PL/SQL block that iterates through all customers and sets a flag IsVIP to TRUE for those with a balance over \$10,000.

SELECT * FROM Customers;

Live SQL

Worksheet

Library

23ai

Return to Live SQL Classic

Help and Feedback

Sign Out

Navigator

Files

My Schema

Tables

Search objects

ACCOUNTS

CUSTOMERS

EMPLOYEES

LOANS

TRANSACTIONS

[SQL Worksheet]*

1

2

3

4

5

6

7

8

9

10

11

12

13

SELECT * FROM Customers;

ALTER TABLE Customers ADD IsVIP VARCHAR2(5);

SELECT * FROM Customers;

DECLARE

BEGIN

FOR cust IN(SELECT * FROM Customers) LOOP

IF cust.Balance>10000 THEN

UPDATE Customers

SET IsVIP='TRUE'

Query result

Script output

DBMS output

Explain Plan

SQL history

Download

Execution time: 0.078 seconds

	CUSTOMERID	NAME	DOB	BALANCE	LASTMODIFIED
1	1	John Doe	5/15/1985, 12:00:00 AM	1000	6/27/2025, 4:40:54 AM
2	2	Jane Smith	7/20/1990, 12:00:00 AM	1500	6/27/2025, 4:40:54 AM
3	3	Chaitanya Pyla	7/15/1947, 12:00:00 AM	150000	6/27/2025, 6:31:26 AM
4	4	Virat Kohli	8/18/1918, 12:00:00 AM	181818	6/27/2025, 6:31:26 AM
5	5	MS Dhoni	7/7/1907, 12:00:00 AM	777777	6/27/2025, 6:31:26 AM

ALTER TABLE Customers ADD IsVIP VARCHAR2(5);

SELECT * FROM Customers;

Live SQL

Worksheet

Library

23ai

Return to Live SQL Classic

Help and Feedback

Sign Out

Navigator

Files

My Schema

Tables

Search objects

ACCOUNTS

CUSTOMERS

EMPLOYEES

LOANS

TRANSACTIONS

[SQL Worksheet]*

1

2

3

4

5

6

7

8

9

10

11

12

13

SELECT * FROM Customers;

ALTER TABLE Customers ADD IsVIP VARCHAR2(5);

SELECT * FROM Customers;

DECLARE

BEGIN

FOR cust IN(SELECT * FROM Customers) LOOP

IF cust.Balance>10000 THEN

UPDATE Customers

SET IsVIP='TRUE'

Query result

Script output

DBMS output

Explain Plan

SQL history

Download

Execution time: 0.004 seconds

	CUSTOMERID	NAME	DOB	BALANCE	LASTMODIFIED	ISVIP
1	1	John Doe	5/15/1985, 12:00:00 AM	1000	6/27/2025, 4:40:54 AM	(null)
2	2	Jane Smith	7/20/1990, 12:00:00 AM	1500	6/27/2025, 4:40:54 AM	(null)
3	3	Chaitanya Pyla	7/15/1947, 12:00:00 AM	150000	6/27/2025, 6:31:26 AM	(null)
4	4	Virat Kohli	8/18/1918, 12:00:00 AM	181818	6/27/2025, 6:31:26 AM	(null)
5	5	MS Dhoni	7/7/1907, 12:00:00 AM	777777	6/27/2025, 6:31:26 AM	(null)

DECLARE

BEGIN

FOR cust IN(SELECT * FROM Customers) LOOP

IF cust.Balance>10000 THEN

UPDATE Customers

SET IsVIP='TRUE'

WHERE CustomerId=cust.CustomerId;

ELSE

UPDATE Customers

SET IsVIP='FALSE'

WHERE CustomerId=cust.CustomerId;

END IF;

END LOOP;

EXCEPTION

WHEN OTHERS THEN

DBMS_OUTPUT.PUT_LINE(' Error Occoured Bro: ' ||SQLERRM);

END;

/

The screenshot displays the Live SQL web application interface. The top navigation bar includes the 'Live SQL' logo, a 'Worksheet' tab, a 'Library' icon, a user profile icon with the name '23ai', a 'Return to Live SQL Classic' button, and links for 'Help and Feedback' and 'Sign Out'.

On the left, the 'Navigator' pane shows a tree view with 'My Schema' and 'Tables'. Under 'Tables', there is a search bar and a list of database objects: ACCOUNTS, CUSTOMERS, EMPLOYEES, LOANS, and TRANSACTIONS.

The main workspace is titled '[SQL Worksheet]*' and contains a PL/SQL script. The script is as follows:

```
18      WHERE CustomerId=cust.CustomerId;
19      END IF;
20  END LOOP;
21
22  EXCEPTION
23      WHEN OTHERS THEN
24          DBMS_OUTPUT.PUT_LINE(' Error Occoured Bro: ' ||SQLERRM);
25  END;
26  /
27
28  SELECT * FROM Customers
```

Below the script editor, there are tabs for 'Query result', 'Script output', 'DBMS output', 'Explain Plan', and 'SQL history'. The 'Script output' tab is currently selected, showing the execution results:

```
Table CUSTOMERS altered.
Elapsed: 00:00:00.031

SQL> DECLARE
    BEGIN
        FOR cust IN(SELECT * FROM Customers) LOOP...
Show more...

PL/SQL procedure successfully completed.
Elapsed: 00:00:00.019
```

SELECT * FROM Customers

Live SQL

Worksheet

Library

23ai

Return to Live SQL Classic

Help and Feedback

Sign Out

NavigatorFiles

My Schema

Tables

Search objects

ACCOUNTS

CUSTOMERS

EMPLOYEES

LOANS

TRANSACTIONS

[SQL Worksheet]*

18WHERE CustomerId=cust.CustomerId;

19END IF;

20END LOOP;

21

22EXCEPTION

23WHEN OTHERS THEN

24DBMS_OUTPUT.PUT_LINE(' Error Occoured Bro: ' ||SQLERRM);

25END;

26/

27

28SELECT * FROM Customers

Query result

Script output

DBMS output

Explain Plan

SQL history

Download

Execution time: 0.004 seconds

	CUSTOMERID	NAME	DOB	BALANCE	LASTMODIFIED	ISVIP
1	1	John Doe	5/15/1985, 12:00:00	1000	6/27/2025, 4:40:54	FALSE
2	2	Jane Smith	7/20/1990, 12:00:00	1500	6/27/2025, 4:40:54	FALSE
3	3	Chaitanya Pyla	7/15/1947, 12:00:00	150000	6/27/2025, 6:31:26	TRUE
4	4	Virat Kohli	8/18/1918, 12:00:00	181818	6/27/2025, 6:31:26	TRUE
5	5	MS Dhoni	7/7/1907, 12:00:00	777777	6/27/2025, 6:31:26	TRUE

Scenario 3: The bank wants to send reminders to customers whose loans are due within the next 30 days.

Question: Write a PL/SQL block that fetches all loans due in the next 30 days and prints a reminder message for each customer.

```
SET SERVEROUTPUT ON;
```

```
BEGIN
  FOR loan_rec IN
  (
    SELECT l.LoanId, l.CustomerId, l.EndDate, c.Name
    FROM Loans l
    JOIN Customers c ON l.CustomerId = c.CustomerId
    WHERE l.EndDate BETWEEN SYSDATE AND SYSDATE + 30
  )
  LOOP

    DBMS_OUTPUT.PUT_LINE('Reminder: Hello Sir ' || loan_rec.Name || ', your loan (ID: ' || loan_rec.LoanId || ') is due
on ' || TO_CHAR(loan_rec.EndDate, 'DD-MON-YYYY') || '.');

  END LOOP;
EXCEPTION
  WHEN OTHERS THEN
    DBMS_OUTPUT.PUT_LINE('Error Occurred: ' || SQLERRM);
END;
/
```

The screenshot shows the Oracle Live SQL interface. On the left, the 'Navigator' pane displays a tree view of the database schema, including 'My Schema', 'Tables', and various system tables like 'ACCOUNTS', 'CUSTOMERS', 'EMPLOYEES', 'LOANS', and 'TRANSACTIONS'. The main editor area shows the PL/SQL code being executed. The 'Script output' tab is selected, showing the execution results. The output includes a reminder message: 'Reminder: Hello Sir Chaitanya Pyla, your loan (ID: 2) is due on 07-JUL-2025.' and a confirmation that the PL/SQL procedure successfully completed. The elapsed time for the execution is 00:00:00.017.