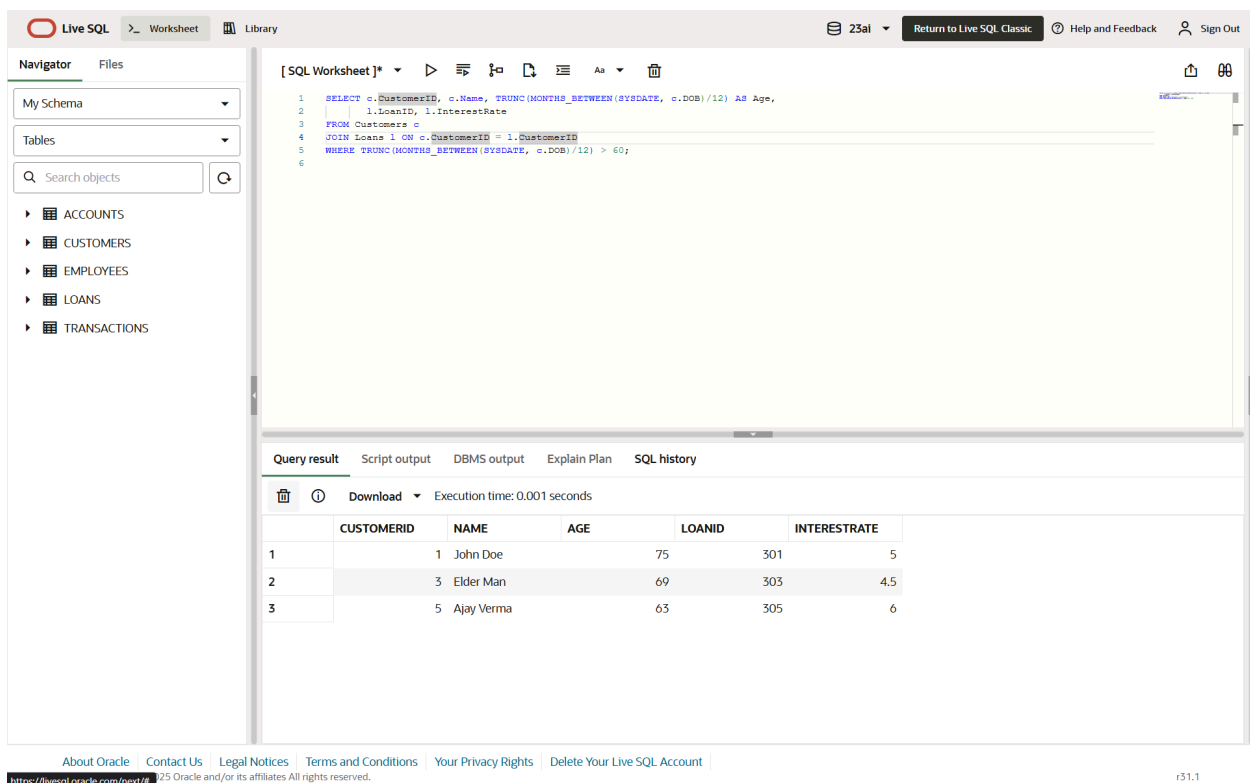


EXERCISE : 01 Control Structures

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

- Before execution



The screenshot shows the Oracle Live SQL interface. On the left is a Navigator pane with a tree view containing 'My Schema', 'Tables', and a search bar. Below these are links to 'ACCOUNTS', 'CUSTOMERS', 'EMPLOYEES', 'LOANS', and 'TRANSACTIONS'. The main area is titled '[SQL Worksheet]*' and contains a SQL query:

```
1 SELECT c.CustomerID, c.Name, TRUNC(MONTHS_BETWEEN(SYSDATE, c.DOB)/12) AS Age,
2       l.LoanID, l.InterestRate
3 FROM Customers c
4 JOIN Loans l ON c.CustomerID = l.CustomerID
5 WHERE TRUNC(MONTHS_BETWEEN(SYSDATE, c.DOB)/12) > 60;
6
```

Below the query editor, the 'Query result' tab is active, showing a table with 5 columns: CUSTOMERID, NAME, AGE, LOANID, and INTERESTRATE. The table contains 3 rows of data. The execution time is 0.001 seconds.

	CUSTOMERID	NAME	AGE	LOANID	INTERESTRATE
1	1	John Doe	75	301	5
2	3	Elder Man	69	303	4.5
3	5	Ajay Verma	63	305	6

At the bottom of the interface, there are links for 'About Oracle', 'Contact Us', 'Legal Notices', 'Terms and Conditions', 'Your Privacy Rights', and 'Delete Your Live SQL Account'. A URL 'https://livesql.oracle.com/next/#' is also visible.

- Script

```
BEGIN
FOR rec IN (
  SELECT l.LoanID, l.InterestRate, c.DOB
  FROM Loans l
  JOIN Customers c ON l.CustomerID = c.CustomerID
)
```

LOOP

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

UPDATE Loans

SET InterestRate = InterestRate - 1

WHERE LoanID = rec.LoanID;

END IF;

END LOOP;

END;

The screenshot displays the Live SQL web application interface. On the left, a 'Navigator' pane shows a tree view of database objects under 'My Schema', including ACCOUNTS, CUSTOMERS, EMPLOYEES, LOANS, and TRANSACTIONS. The 'CUSTOMERS' table is selected. The main editor area, titled '[SQL Worksheet]*', contains a PL/SQL procedure script. The script begins with a 'BEGIN' statement, followed by a 'FOR' loop that iterates over a cursor named 'rec' which selects 'LoanID', 'InterestRate', and 'DOB' from the 'Loans' table. Inside the loop, there is an 'IF' statement checking if the number of months between the current date and the customer's date of birth is greater than 60. If true, it updates the 'InterestRate' in the 'Loans' table by subtracting 1. The loop ends with 'END LOOP;', and the procedure concludes with 'END;'. Below the editor, the 'Script output' tab is active, showing the execution results. It displays the SQL text being executed, followed by the message 'PL/SQL procedure successfully completed.' and the elapsed time 'Elapsed: 00:00:00.013'.

```
1 BEGIN
2   FOR rec IN (
3     SELECT l.LoanID, l.InterestRate, c.DOB
4     FROM Loans l
5     JOIN Customers c ON l.CustomerID = c.CustomerID
6   )
7   LOOP
8     IF MONTHS_BETWEEN(SYSDATE, rec.DOB) / 12 > 60 THEN
9       UPDATE Loans
10        SET InterestRate = InterestRate - 1
11        WHERE LoanID = rec.LoanID;
12     END IF;
13   END LOOP;
14 END;
```

Query result Script output DBMS output Explain Plan SQL history

SQL> BEGIN
FOR rec IN (
SELECT l.LoanID, l.InterestRate, c.DOB
FROM Loans l...

Show more...

PL/SQL procedure successfully completed.
Elapsed: 00:00:00.013

- Output

Live SQL Worksheet Library 23al Return to Live SQL Classic Help and Feedback Sign Out

Navigator Files

My Schema

Tables

Search objects

ACCOUNTS CUSTOMERS EMPLOYEES LOANS TRANSACTIONS

```

1 SELECT c.CustomerID, c.Name, TRUNC(MONTHS_BETWEEN(SYSDATE, c.DOB)/12) AS Age,
2       l.LoanID, l.InterestRate
3 FROM Customers c
4 JOIN Loans l ON c.CustomerID = l.CustomerID
5 WHERE TRUNC(MONTHS_BETWEEN(SYSDATE, c.DOB)/12) > 60;
6

```

Query result Script output DBMS output Explain Plan SQL history

Download Execution time: 0.001 seconds

	CUSTOMERID	NAME	AGE	LOANID	INTERESTRATE
1	1	John Doe	75	301	4
2	3	Elder Man	69	303	3.5
3	5	Ajay Verma	63	305	5

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r31.1

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

- Before execution

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

```

1 SELECT CustomerID, Name, Balance, IsVIP
2 FROM Customers
3
4

```

Query result Script output DBMS output Explain Plan SQL history

Download Execution time: 0.001 seconds

	CUSTOMERID	NAME	BALANCE	ISVIP
1	1	John Doe	12000	N
2	2	Jane Smith	9000	N
3	3	Elder Man	5000	N
4	4	Riya Patel	15000	N
5	5	Ajay Verma	3000	N

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- Script

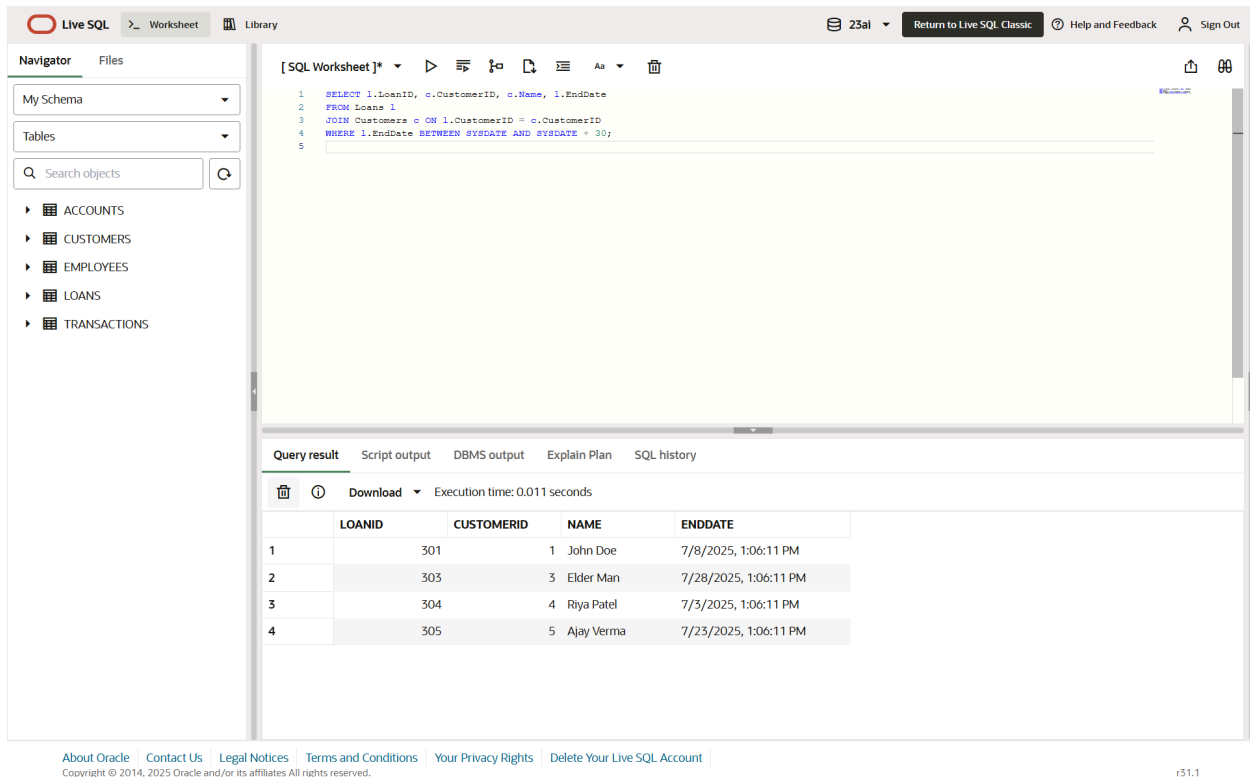
```

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

```


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

- Before script



The screenshot shows the Oracle Live SQL interface. On the left is a Navigator pane with a tree view of database objects: ACCOUNTS, CUSTOMERS, EMPLOYEES, LOANS, and TRANSACTIONS. The main area displays a SQL worksheet with the following query:

```
1 SELECT l.LoanID, c.CustomerID, c.Name, l.EndDate
2 FROM Loans l
3 JOIN Customers c ON l.CustomerID = c.CustomerID
4 WHERE l.EndDate BETWEEN SYSDATE AND SYSDATE + 30;
5
```

Below the query, the 'Query result' tab is active, showing the execution results. The execution time is 0.011 seconds. The results are displayed in a table with the following columns: LOANID, CUSTOMERID, NAME, and ENDDATE.

	LOANID	CUSTOMERID	NAME	ENDDATE
1	301	1	John Doe	7/8/2025, 1:06:11 PM
2	303	3	Elder Man	7/28/2025, 1:06:11 PM
3	304	4	Riya Patel	7/3/2025, 1:06:11 PM
4	305	5	Ajay Verma	7/23/2025, 1:06:11 PM

At the bottom of the interface, there are links for 'About Oracle', 'Contact Us', 'Legal Notices', 'Terms and Conditions', 'Your Privacy Rights', and 'Delete Your Live SQL Account'. The copyright notice states 'Copyright © 2014, 2025 Oracle and/or its affiliates All rights reserved.' and the version is 'r31.1'.

- Script and output

```
BEGIN
FOR rec IN (
  SELECT l.LoanID, c.Name, l.EndDate
  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: Loan ID ' || rec.LoanID || ' for customer ' || rec.Name ||
' is due on ' || TO_CHAR(rec.EndDate, 'YYYY-MM-DD')
);
END LOOP;
END;
/

```

The screenshot shows the Oracle Live SQL web interface. On the left is a 'Navigator' pane with a tree view of database objects: ACCOUNTS, CUSTOMERS, EMPLOYEES, LOANS, and TRANSACTIONS. The main area is a 'Worksheet' titled '[SQL Worksheet]*' containing a PL/SQL script. The script is a loop that iterates over loans, joining with customers and outputting a reminder message for each loan due within the next 30 days. Below the script editor, there are tabs for 'Query result', 'Script output', 'DBMS output', 'Explain Plan', and 'SQL history'. The 'Script output' tab is active, displaying the execution results of the script, which shows four reminder messages for different loans and a confirmation that the PL/SQL procedure completed successfully.

```

1 BEGIN
2   FOR rec IN (
3     SELECT l.LoanID, c.Name, l.EndDate
4     FROM Loans l
5     JOIN Customers c ON l.CustomerID = c.CustomerID
6     WHERE l.EndDate BETWEEN SYSDATE AND SYSDATE + 30
7   ) LOOP
8     DBMS_OUTPUT.PUT_LINE(
9       'Reminder: Loan ID ' || rec.LoanID || ' for customer ' || rec.Name ||
10      ' is due on ' || TO_CHAR(rec.EndDate, 'YYYY-MM-DD')
11    );
12  END LOOP;
13 END;
14 /
15

```

SQL> BEGIN
FOR rec IN (
SELECT l.LoanID, c.Name, l.EndDate
FROM Loans l...

Show more...

Reminder: Loan ID 301 for customer John Doe is due on 2025-07-08
Reminder: Loan ID 303 for customer Elder Man is due on 2025-07-28
Reminder: Loan ID 304 for customer Riya Patel is due on 2025-07-03
Reminder: Loan ID 305 for customer Ajay Verma is due on 2025-07-23

PL/SQL procedure successfully completed.
Elapsed: 00:00:00.007