**Exercise 3: Stored Procedures**

**Scenario 1:** The bank needs to process monthly interest for all savings accounts.

* + **Question:** Write a stored procedure **ProcessMonthlyInterest** that calculates and updates the balance of all savings accounts by applying an interest rate of 1% to the current balance.

**SOLUTION:**

**Stored Procedure:**

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS

BEGIN

-- Apply 1% interest to all savings accounts

UPDATE Accounts

SET Balance = Balance + (Balance \* 0.01)

WHERE LOWER(AccountType) = 'savings';

DBMS\_OUTPUT.PUT\_LINE('Monthly interest processed for all savings accounts.');

END;

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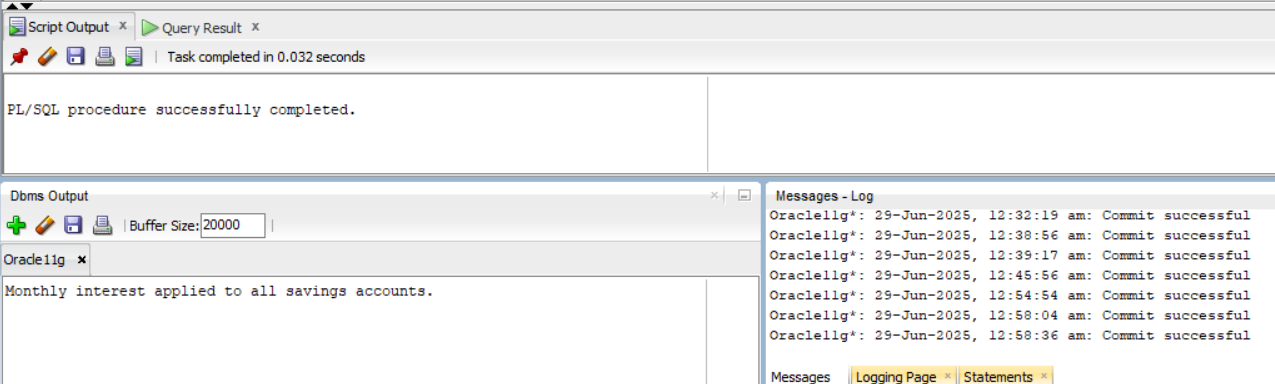
**To Run Procedure:**

BEGIN

ProcessMonthlyInterest;

END;

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**Scenario 2:** The bank wants to implement a bonus scheme for employees based on their performance.

* + **Question:** Write a stored procedure **UpdateEmployeeBonus** that updates the salary of employees in a given department by adding a bonus percentage passed as a parameter.

**SOLUTION:**

**Stored Procedure:**

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (

p\_department IN VARCHAR2,

p\_bonus\_pct IN NUMBER -- e.g., pass 10 for 10% bonus

)

IS

BEGIN

UPDATE Employees

SET Salary = Salary + (Salary \* p\_bonus\_pct / 100)

WHERE Department = p\_department;

DBMS\_OUTPUT.PUT\_LINE(

'Bonus of ' || p\_bonus\_pct || '% applied to department: ' || p\_department

);

END;

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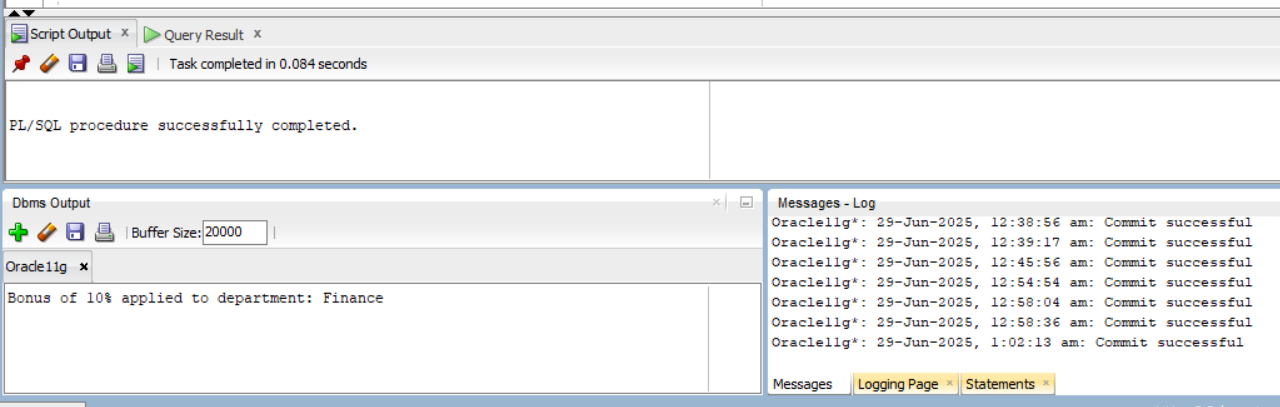
**To run Procedure:**

BEGIN

UpdateEmployeeBonus('Finance', 10);

END;

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**Scenario 3:** Customers should be able to transfer funds between their accounts.

* + **Question:** Write a stored procedure **TransferFunds** that transfers a specified amount from one account to another, checking that the source account has sufficient balance before making the transfer.

**SOLUTION:**

**Stored Procedure:**

CREATE OR REPLACE PROCEDURE fundtransfer(

from\_account IN NUMBER,

to\_account IN NUMBER,

amount IN NUMBER

)

IS

v\_balance NUMBER;

BEGIN

SELECT balance INTO v\_balance

FROM accounts

WHERE accountid = from\_account

FOR UPDATE;

IF v\_balance < amount THEN

RAISE\_APPLICATION\_ERROR(-20001, 'Insufficient balance in source account');

END IF;

UPDATE accounts

SET balance = balance - amount,

lastModified = SYSDATE

WHERE accountid = from\_account;

UPDATE accounts

SET balance = balance + amount,

lastModified = SYSDATE

WHERE accountid = to\_account;

DBMS\_OUTPUT.PUT\_LINE('Transfer of ' || amount || ' completed from Account ' ||

from\_account || ' to Account ' || to\_account);

END;

/

**To run Procedure:**

BEGIN

fundtransfer(101, 103, 5000);

END;

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