PL/SQL PROGRAMMING

**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.

Code:

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS

BEGIN

UPDATE accounts

SET balance = balance + (balance \* 0.01)

WHERE account\_type = 'Savings';

COMMIT;

END;

**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.

Code:

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus(

dept\_id IN NUMBER,

bonus\_pct IN NUMBER

) IS

BEGIN

UPDATE employees

SET salary = salary + (salary \* bonus\_pct)

WHERE department\_id = dept\_id;

COMMIT;

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.

Code:

CREATE OR REPLACE PROCEDURE TransferFunds(

from\_account\_id IN NUMBER,

to\_account\_id IN NUMBER,

amount IN NUMBER

) IS

insufficient\_funds EXCEPTION;

BEGIN

DECLARE

src\_balance NUMBER;

BEGIN

SELECT balance INTO src\_balance FROM accounts WHERE account\_id = from\_account\_id FOR UPDATE;

IF src\_balance < amount THEN

RAISE insufficient\_funds;

END IF;

UPDATE accounts

SET balance = balance - amount

WHERE account\_id = from\_account\_id;

UPDATE accounts

SET balance = balance + amount

WHERE account\_id = to\_account\_id;

COMMIT;

EXCEPTION

WHEN insufficient\_funds THEN

ROLLBACK;

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

WHEN NO\_DATA\_FOUND THEN

ROLLBACK;

RAISE\_APPLICATION\_ERROR(-20002, 'One or both accounts not found.');

END;

END;

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