**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.

**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.

**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.

**Answers :**

**Scenario 1: Process Monthly Interest for Savings Accounts**

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS

BEGIN

FOR acc IN (

SELECT account\_id, balance

FROM accounts

WHERE account\_type = 'SAVINGS'

)

LOOP

UPDATE accounts

SET balance = balance + (balance \* 0.01)

WHERE account\_id = acc.account\_id;

END LOOP;

COMMIT;

END;

**Scenario 2: Update Employee Bonus by Department**

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (

dept\_id IN NUMBER,

bonus\_percent IN NUMBER

) IS

BEGIN

UPDATE employees

SET salary = salary + (salary \* (bonus\_percent / 100))

WHERE department\_id = dept\_id;

COMMIT;

END;

**Scenario 3: Transfer Funds Between Accounts**

CREATE OR REPLACE PROCEDURE TransferFunds (

from\_acc\_id IN NUMBER,

to\_acc\_id IN NUMBER,

amount IN NUMBER

) IS

insufficient\_balance EXCEPTION;

BEGIN

-- Check balance

DECLARE

current\_balance NUMBER;

BEGIN

SELECT balance INTO current\_balance FROM accounts WHERE account\_id = from\_acc\_id;

IF current\_balance < amount THEN

RAISE insufficient\_balance;

END IF;

-- Deduct from source account

UPDATE accounts

SET balance = balance - amount

WHERE account\_id = from\_acc\_id;

-- Add to destination account

UPDATE accounts

SET balance = balance + amount

WHERE account\_id = to\_acc\_id;

COMMIT;

END;

EXCEPTION

WHEN insufficient\_balance THEN

DBMS\_OUTPUT.PUT\_LINE('Transfer failed: Insufficient balance in source account.');

WHEN OTHERS THEN

DBMS\_OUTPUT.PUT\_LINE('An error occurred: ' || SQLERRM);

ROLLBACK;

END;