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.**

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest AS

BEGIN

UPDATE Accounts

SET Balance = Balance \* 1.01

WHERE AccountType = 'Savings';

COMMIT;

DBMS\_OUTPUT.PUT\_LINE('Monthly interest applied to all savings accounts.');

END ProcessMonthlyInterest;

**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.**

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (

p\_department IN VARCHAR2,

p\_bonus\_percentage IN NUMBER

) AS

BEGIN

UPDATE Employees

SET Salary = Salary \* (1 + p\_bonus\_percentage / 100)

WHERE Department = p\_department;

COMMIT;

DBMS\_OUTPUT.PUT\_LINE('Bonus applied to all employees in department: ' || p\_department);

END UpdateEmployeeBonus;

**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.**

CREATE OR REPLACE PROCEDURE TransferFunds (

p\_from\_account IN NUMBER,

p\_to\_account IN NUMBER,

p\_amount IN NUMBER

) AS

v\_balance NUMBER;

BEGIN

SELECT Balance INTO v\_balance

FROM Accounts

WHERE AccountID = p\_from\_account;

IF v\_balance < p\_amount THEN

RAISE\_APPLICATION\_ERROR(-20001, 'Insufficient funds in account ' || p\_from\_account);

END IF;

BEGIN

UPDATE Accounts

SET Balance = Balance - p\_amount

WHERE AccountID = p\_from\_account;

UPDATE Accounts

SET Balance = Balance + p\_amount

WHERE AccountID = p\_to\_account;

COMMIT;

DBMS\_OUTPUT.PUT\_LINE('Transfer of ' || p\_amount || ' from account ' || p\_from\_account || ' to account ' || p\_to\_account || ' completed successfully.');

EXCEPTION

WHEN OTHERS THEN

ROLLBACK;

DBMS\_OUTPUT.PUT\_LINE('Error: ' || SQLERRM);

END;

END TransferFunds;