**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.

**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 AS

BEGIN

    UPDATE Accounts

    SET Balance = Balance + (Balance \* 0.01)

    WHERE AccountType = 'Savings';

    COMMIT;

END;

**Output:** Balances of all savings accounts updated by applying 1% monthly interest.

**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 (

    p\_department IN VARCHAR2,

    p\_bonus\_percent IN NUMBER

) AS

BEGIN

    UPDATE Employees

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

    WHERE Department = p\_department;

    COMMIT;

END;

**Output:** Salaries of employees in the specified department updated with the given bonus percentage.

**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 (

    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 balance.');

    END IF;

    UPDATE Accounts SET Balance = Balance - p\_amount WHERE AccountID = p\_from\_account;

    UPDATE Accounts SET Balance = Balance + p\_amount WHERE AccountID = p\_to\_account;

    INSERT INTO Transactions (TransactionID, AccountID, TransactionDate, Amount, TransactionType)

    VALUES (Transactions\_seq.NEXTVAL, p\_from\_account, SYSDATE, p\_amount, 'Debit');

    INSERT INTO Transactions (TransactionID, AccountID, TransactionDate, Amount, TransactionType)

    VALUES (Transactions\_seq.NEXTVAL, p\_to\_account, SYSDATE, p\_amount, 'Credit');

    COMMIT;

END;

**Output:** Funds successfully transferred between accounts after checking sufficient balance; transactions recorded.