**Exercise 3: Stored Procedures**

**Scenario 1:**

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS

BEGIN

    UPDATE Accounts

    SET Balance = Balance + (Balance \* 0.01)

    WHERE AccountType = 'Savings';

    COMMIT;

    DBMS\_OUTPUT.PUT\_LINE('Monthly interest of 1% applied to all Savings accounts.');

END;

/

BEGIN

    ProcessMonthlyInterest;

END;

/

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**Scenario 2:**

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (

    v\_dept        IN VARCHAR2,

    v\_bonus\_pct   IN NUMBER

) IS

BEGIN

    UPDATE Employees SET Salary = Salary + (Salary \* v\_bonus\_pct / 100) WHERE Department = v\_dept;

    DBMS\_OUTPUT.PUT\_LINE('Bonus of ' || v\_bonus\_pct || '% applied to department: ' || v\_dept);

END;

/

BEGIN

    UpdateEmployeeBonus('IT',10);

END;

/

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**Scenario 3:**

CREATE OR REPLACE PROCEDURE TransferFunds (

    p\_from\_account\_id IN NUMBER,

    p\_to\_account\_id   IN NUMBER,

    p\_amount          IN NUMBER

) IS

    v\_from\_balance    Accounts.Balance%TYPE;

    v\_from\_cust\_id    Accounts.CustomerID%TYPE;

    v\_to\_cust\_id      Accounts.CustomerID%TYPE;

BEGIN

    IF p\_amount <= 0 THEN

        RAISE\_APPLICATION\_ERROR(-20001, 'Transfer amount must be greater than 0.');

    END IF;

    SELECT Balance, CustomerID INTO v\_from\_balance, v\_from\_cust\_id FROM Accounts WHERE AccountID = p\_from\_account\_id;

    SELECT CustomerID INTO v\_to\_cust\_id FROM Accounts

    WHERE AccountID = p\_to\_account\_id;

    IF v\_from\_balance < p\_amount THEN

        RAISE\_APPLICATION\_ERROR(-20002, 'Insufficient funds in source account.');

    END IF;

    UPDATE Accounts

    SET Balance = Balance - p\_amount

    WHERE AccountID = p\_from\_account\_id;

    UPDATE Accounts

    SET Balance = Balance + p\_amount

    WHERE AccountID = p\_to\_account\_id;

    IF v\_from\_cust\_id != v\_to\_cust\_id THEN

        UPDATE Customers

        SET Balance = Balance - p\_amount

        WHERE CustomerID = v\_from\_cust\_id;

        UPDATE Customers

        SET Balance = Balance + p\_amount

        WHERE CustomerID = v\_to\_cust\_id;

    END IF;

    COMMIT;

    DBMS\_OUTPUT.PUT\_LINE('Transferred ' || p\_amount || ' from Account ' || p\_from\_account\_id ||

                         ' (Customer ' || v\_from\_cust\_id || ') to Account ' || p\_to\_account\_id ||

                         ' (Customer ' || v\_to\_cust\_id || ')');

EXCEPTION

    WHEN NO\_DATA\_FOUND THEN

        RAISE\_APPLICATION\_ERROR(-20003, 'Invalid account ID(s) provided.');

    WHEN OTHERS THEN

        ROLLBACK;

        RAISE;

END;

/

BEGIN

    TransferFunds(1, 2, 500);

END;

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