**Exercise 3: Stored Procedures**

**Code:**

CREATE TABLE savings\_accounts (

account\_id NUMBER PRIMARY KEY,

customer\_id NUMBER,

balance NUMBER(10, 2)

);

CREATE TABLE employees (

emp\_id NUMBER PRIMARY KEY,

emp\_name VARCHAR2(50),

department\_id NUMBER,

salary NUMBER(10, 2)

);

CREATE TABLE accounts (

account\_id NUMBER PRIMARY KEY,

customer\_id NUMBER,

balance NUMBER(10, 2)

);

INSERT INTO savings\_accounts VALUES (1, 101, 1000);

INSERT INTO savings\_accounts VALUES (2, 102, 2000);

INSERT INTO employees VALUES (1, 'Alice', 10, 50000);

INSERT INTO employees VALUES (2, 'Bob', 10, 60000);

INSERT INTO employees VALUES (3, 'Charlie', 20, 55000);

INSERT INTO accounts VALUES (1, 201, 5000);

INSERT INTO accounts VALUES (2, 202, 3000);

COMMIT;

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS

BEGIN

FOR acc IN (SELECT account\_id, balance FROM savings\_accounts) LOOP

UPDATE savings\_accounts

SET balance = balance + (balance \* 0.01)

WHERE account\_id = acc.account\_id;

END LOOP;

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

END;

/

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (

p\_dept\_id IN NUMBER,

p\_bonus\_percent IN NUMBER

) IS

BEGIN

UPDATE employees

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

WHERE department\_id = p\_dept\_id;

DBMS\_OUTPUT.PUT\_LINE('Bonuses applied for department ID: ' || p\_dept\_id);

END;

/

CREATE OR REPLACE PROCEDURE TransferFunds (

p\_from\_account IN NUMBER,

p\_to\_account IN NUMBER,

p\_amount IN NUMBER

) IS

v\_balance NUMBER;

BEGIN

SELECT balance INTO v\_balance

FROM accounts

WHERE account\_id = p\_from\_account;

IF v\_balance < p\_amount THEN

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

ELSE

UPDATE accounts

SET balance = balance - p\_amount

WHERE account\_id = p\_from\_account;

UPDATE accounts

SET balance = balance + p\_amount

WHERE account\_id = p\_to\_account;

DBMS\_OUTPUT.PUT\_LINE('Transfer of ' || p\_amount || ' completed.');

END IF;

END;

/

BEGIN

DBMS\_OUTPUT.PUT\_LINE('--- Running ProcessMonthlyInterest ---');

ProcessMonthlyInterest;

DBMS\_OUTPUT.PUT\_LINE('--- Running UpdateEmployeeBonus for department 10 (10%) ---');

UpdateEmployeeBonus(10, 10);

DBMS\_OUTPUT.PUT\_LINE('--- Running TransferFunds from Account 1 to 2 ---');

TransferFunds(1, 2, 1000);

END;

/

**Output:**

