**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.

Ans:

CREATE TABLE savings\_accounts (

account\_id NUMBER PRIMARY KEY,

customer\_id NUMBER,

balance NUMBER

);

Step 2: Insert Sample Data:

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

INSERT INTO savings\_accounts VALUES (102, 2, 5000);

INSERT INTO savings\_accounts VALUES (103, 3, 2000);

COMMIT;

Step 3: Create the Stored Procedure

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest AS

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;

COMMIT;

END;

/

Step 4: Execute the Procedure

BEGIN

ProcessMonthlyInterest;

END;

/

**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.

Ans:

Step 1: Create the Table

CREATE TABLE employees (

emp\_id NUMBER PRIMARY KEY,

name VARCHAR2(100),

dept\_id NUMBER,

salary NUMBER

);

Step 2: Insert Sample Data

INSERT INTO employees VALUES (1, 'Anil', 101, 50000);

INSERT INTO employees VALUES (2, 'Sunita', 101, 60000);

INSERT INTO employees VALUES (3, 'Rahul', 102, 55000);

COMMIT;

Step 3: Create the Stored Procedure

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (

p\_dept\_id NUMBER,

p\_bonus\_percent NUMBER

) AS

BEGIN

UPDATE employees

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

WHERE dept\_id = p\_dept\_id;

COMMIT;

END;

/

Step 4: Execute the Procedure

BEGIN

UpdateEmployeeBonus(101, 10);

END;

/

**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.

Step 1: Create the Table

CREATE TABLE bank\_accounts (

acc\_id NUMBER PRIMARY KEY,

cust\_id NUMBER,

balance NUMBER

);

Step 2: Insert Sample Data

INSERT INTO bank\_accounts VALUES (201, 1, 1000);

INSERT INTO bank\_accounts VALUES (202, 1, 500);

COMMIT;

Step 3: Create the Stored Procedure

CREATE OR REPLACE PROCEDURE TransferFunds (

p\_from\_acc NUMBER,

p\_to\_acc NUMBER,

p\_amount NUMBER

) AS

v\_balance NUMBER;

BEGIN

-- Get balance of source account

SELECT balance INTO v\_balance

FROM bank\_accounts

WHERE acc\_id = p\_from\_acc;

IF v\_balance >= p\_amount THEN

-- Deduct from source

UPDATE bank\_accounts

SET balance = balance - p\_amount

WHERE acc\_id = p\_from\_acc;

-- Add to target

UPDATE bank\_accounts

SET balance = balance + p\_amount

WHERE acc\_id = p\_to\_acc;

COMMIT;

ELSE

DBMS\_OUTPUT.PUT\_LINE('Insufficient funds.');

END IF;

END;

/

Step 4: Execute the Procedure

BEGIN

TransferFunds(201, 202, 300);

END;

/