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.

**Code:**

-- Scenario 1: Process monthly interest for all savings accounts

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS

BEGIN

UPDATE accounts

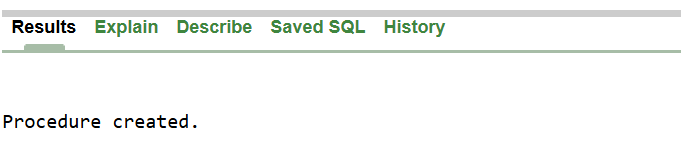
SET balance = balance + (balance \* 0.01)

WHERE account\_type = 'Savings';

COMMIT;

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.

**Code:**

-- Scenario 2: Update employee salary with bonus in a department

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus(

dept\_id IN NUMBER,

bonus\_pct IN NUMBER -- e.g., pass 10 for 10%

) IS

BEGIN

UPDATE employees

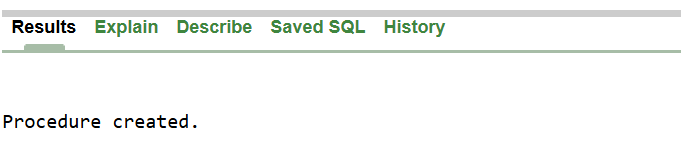
SET salary = salary + (salary \* bonus\_pct / 100)

WHERE department\_id = dept\_id;

COMMIT;

END;

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**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:**

-- Scenario 3: Transfer funds between accounts

CREATE OR REPLACE PROCEDURE TransferFunds(

from\_acc\_id IN NUMBER,

to\_acc\_id IN NUMBER,

amount IN NUMBER

) IS

insufficient\_funds EXCEPTION;

v\_balance NUMBER;

BEGIN

-- Check balance of source account

SELECT balance INTO v\_balance

FROM accounts

WHERE account\_id = from\_acc\_id

FOR UPDATE;

IF v\_balance < amount THEN

RAISE insufficient\_funds;

END IF;

-- Deduct from source

UPDATE accounts

SET balance = balance - amount

WHERE account\_id = from\_acc\_id;

-- Add to destination

UPDATE accounts

SET balance = balance + amount

WHERE account\_id = to\_acc\_id;

COMMIT;

EXCEPTION

WHEN insufficient\_funds THEN

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

ROLLBACK;

WHEN OTHERS THEN

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

ROLLBACK;

END;

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