

Exercise 3: Stored Procedures

Scenario 1:

```
CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS
  CURSOR savings_accounts_cursor IS
    SELECT account_id, balance
    FROM accounts
    WHERE account_type = 'savings';

  v_account_id accounts.account_id%TYPE;
  v_balance accounts.balance%TYPE;
BEGIN
  OPEN savings_accounts_cursor;
  LOOP
    FETCH savings_accounts_cursor INTO v_account_id, v_balance;
    EXIT WHEN savings_accounts_cursor%NOTFOUND;

    -- Calculate and update the new balance with 1% interest
    UPDATE accounts
    SET balance = balance + (balance * 0.01)
    WHERE account_id = v_account_id;
  END LOOP;
  CLOSE savings_accounts_cursor;

  COMMIT;
END ProcessMonthlyInterest;
/
```

Scenario 2:

```
CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (
  p_department_id IN NUMBER,
  p_bonus_percentage IN NUMBER
) IS
BEGIN
  -- Update the salary by adding the bonus percentage
  UPDATE employees
  SET salary = salary * (1 + p_bonus_percentage / 100)
  WHERE department_id = p_department_id;

  COMMIT;
END UpdateEmployeeBonus;
/
```

Scenario 3:

```
CREATE OR REPLACE PROCEDURE TransferFunds (  
    p_from_account_id IN NUMBER,  
    p_to_account_id IN NUMBER,  
    p_amount IN NUMBER  
) IS  
    insufficient_funds EXCEPTION;  
    v_from_balance NUMBER;  
BEGIN  
    -- Check if the from account has sufficient funds  
    SELECT balance INTO v_from_balance FROM accounts WHERE account_id = p_from_account_id;  
    IF v_from_balance < p_amount THEN  
        RAISE insufficient_funds;  
    END IF;  
    -- Perform the transfer  
    UPDATE accounts SET balance = balance - p_amount WHERE account_id = p_from_account_id;  
    UPDATE accounts SET balance = balance + p_amount WHERE account_id = p_to_account_id;  
    COMMIT;  
EXCEPTION  
    WHEN insufficient_funds THEN  
        ROLLBACK;  
        DBMS_OUTPUT.PUT_LINE('Error: Insufficient funds in account ' || p_from_account_id);  
    WHEN OTHERS THEN  
        ROLLBACK;  
        DBMS_OUTPUT.PUT_LINE('Error: An unexpected error occurred during the fund transfer.');
```

END TransferFunds;

/