Exercise 3 – Stored Procedure

Question 1: 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.

```
CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS

BEGIN

  FOR acc IN(SELECT AccountID,Balance FROM ACCOUNTS WHERE AccountType='Savings')

  LOOP

    UPDATE ACCOUNTS SET Balance=Balance+(Balance*0.01)

    WHERE AccountID=acc.AccountID;

  END LOOP;

  COMMIT;

END;
```

Question 2: Write a stored procedure UpdateEmployeeBonus that updates the salary of employees in a given department by adding a bonus percentage passed as a parameter.

```
CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus(p_DepartmentID IN EMPLOYEES.DepartmentID%TYPE,p_BonusPercent IN NUMBER) IS

BEGIN

  UPDATE EMPLOYEES

  SET Salary=Salary+(Salary*p_BonusPercent/100)

  WHERE DepartmentID=p_DepartmentID;

  COMMIT;

END;
```

Question 3: 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.

```sql
CREATE OR REPLACE PROCEDURE TransferFunds(p_FromAccountID IN ACCOUNTS.AccountID%TYPE,p_ToAccountID IN ACCOUNTS.AccountID%TYPE,p_Amount IN NUMBER) IS v_FromBalance ACCOUNTS.Balance%TYPE;

BEGIN

  SELECT Balance INTO v_FromBalance FROM ACCOUNTS WHERE AccountID = p_FromAccountID FOR UPDATE;

  IF v_FromBalance < p_Amount THEN RAISE_APPLICATION_ERROR(-20001, 'Insufficient funds in source account.');

  END IF;

  UPDATE ACCOUNTS SET Balance=Balance-p_Amount WHERE AccountID=p_FromAccountID;

  UPDATE ACCOUNTS SET Balance = Balance + p_Amount WHERE AccountID=p_ToAccountID;

  COMMIT;
END;
```