**Exercise 7: Packages**

**Scenario 1: CustomerManagement Package**

CREATE OR REPLACE PACKAGE CustomerManagement IS

PROCEDURE AddNewCustomer(p\_CustomerID NUMBER, p\_Name VARCHAR2, p\_DOB DATE, p\_Balance NUMBER);

PROCEDURE UpdateCustomerDetails(p\_CustomerID NUMBER, p\_Name VARCHAR2, p\_DOB DATE, p\_Balance NUMBER);

FUNCTION GetCustomerBalance(p\_CustomerID NUMBER) RETURN NUMBER;

END CustomerManagement;

/

CREATE OR REPLACE PACKAGE BODY CustomerManagement IS

PROCEDURE AddNewCustomer(p\_CustomerID NUMBER, p\_Name VARCHAR2, p\_DOB DATE, p\_Balance NUMBER) IS

BEGIN

INSERT INTO Customers (CustomerID, Name, DOB, Balance, LastModified)

VALUES (p\_CustomerID, p\_Name, p\_DOB, p\_Balance, SYSDATE);

COMMIT;

END AddNewCustomer;

PROCEDURE UpdateCustomerDetails(p\_CustomerID NUMBER, p\_Name VARCHAR2, p\_DOB DATE, p\_Balance NUMBER) IS

BEGIN

UPDATE Customers

SET Name = p\_Name, DOB = p\_DOB, Balance = p\_Balance, LastModified = SYSDATE

WHERE CustomerID = p\_CustomerID;

COMMIT;

END UpdateCustomerDetails;

FUNCTION GetCustomerBalance(p\_CustomerID NUMBER) RETURN NUMBER IS

v\_balance NUMBER;

BEGIN

SELECT Balance INTO v\_balance FROM Customers WHERE CustomerID = p\_CustomerID;

RETURN v\_balance;

END GetCustomerBalance;

END CustomerManagement;

/

**Scenario 2: EmployeeManagement Package**

CREATE OR REPLACE PACKAGE EmployeeManagement IS

PROCEDURE HireEmployee(p\_EmployeeID NUMBER, p\_Name VARCHAR2, p\_Position VARCHAR2, p\_Salary NUMBER, p\_Department VARCHAR2);

PROCEDURE UpdateEmployeeDetails(p\_EmployeeID NUMBER, p\_Name VARCHAR2, p\_Position VARCHAR2, p\_Salary NUMBER, p\_Department VARCHAR2);

FUNCTION CalculateAnnualSalary(p\_EmployeeID NUMBER) RETURN NUMBER;

END EmployeeManagement;

/

CREATE OR REPLACE PACKAGE BODY EmployeeManagement IS

PROCEDURE HireEmployee(p\_EmployeeID NUMBER, p\_Name VARCHAR2, p\_Position VARCHAR2, p\_Salary NUMBER, p\_Department VARCHAR2) IS

BEGIN

INSERT INTO Employees (EmployeeID, Name, Position, Salary, Department, HireDate)

VALUES (p\_EmployeeID, p\_Name, p\_Position, p\_Salary, p\_Department, SYSDATE);

COMMIT;

END HireEmployee;

PROCEDURE UpdateEmployeeDetails(p\_EmployeeID NUMBER, p\_Name VARCHAR2, p\_Position VARCHAR2, p\_Salary NUMBER, p\_Department VARCHAR2) IS

BEGIN

UPDATE Employees

SET Name = p\_Name, Position = p\_Position, Salary = p\_Salary, Department = p\_Department

WHERE EmployeeID = p\_EmployeeID;

COMMIT;

END UpdateEmployeeDetails;

FUNCTION CalculateAnnualSalary(p\_EmployeeID NUMBER) RETURN NUMBER IS

v\_annual\_salary NUMBER;

BEGIN

SELECT Salary \* 12 INTO v\_annual\_salary FROM Employees WHERE EmployeeID = p\_EmployeeID;

RETURN v\_annual\_salary;

END CalculateAnnualSalary;

END EmployeeManagement;

/

**Scenario 3: AccountOperations Package**

CREATE OR REPLACE PACKAGE AccountOperations IS

PROCEDURE OpenNewAccount(p\_AccountID NUMBER, p\_CustomerID NUMBER, p\_AccountType VARCHAR2, p\_Balance NUMBER);

PROCEDURE CloseAccount(p\_AccountID NUMBER);

FUNCTION GetTotalBalance(p\_CustomerID NUMBER) RETURN NUMBER;

END AccountOperations;

/

CREATE OR REPLACE PACKAGE BODY AccountOperations IS

PROCEDURE OpenNewAccount(p\_AccountID NUMBER, p\_CustomerID NUMBER, p\_AccountType VARCHAR2, p\_Balance NUMBER) IS

BEGIN

INSERT INTO Accounts (AccountID, CustomerID, AccountType, Balance, LastModified)

VALUES (p\_AccountID, p\_CustomerID, p\_AccountType, p\_Balance, SYSDATE);

COMMIT;

END OpenNewAccount;

PROCEDURE CloseAccount(p\_AccountID NUMBER) IS

BEGIN

DELETE FROM Accounts WHERE AccountID = p\_AccountID;

COMMIT;

END CloseAccount;

FUNCTION GetTotalBalance(p\_CustomerID NUMBER) RETURN NUMBER IS

v\_total\_balance NUMBER;

BEGIN

SELECT SUM(Balance) INTO v\_total\_balance FROM Accounts WHERE CustomerID = p\_CustomerID;

RETURN v\_total\_balance;

END GetTotalBalance;

END AccountOperations;

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