**Exercise 2: Error Handling**

**Scenario 1:**

CREATE OR REPLACE PROCEDURE SafeTransferFunds (

p\_from\_account\_id IN NUMBER,

p\_to\_account\_id IN NUMBER,

p\_amount IN NUMBER

) AS

v\_from\_balance NUMBER;

BEGIN

IF p\_amount <= 0 THEN

RAISE\_APPLICATION\_ERROR(-20001, 'Amount must be positive.');

END IF;

SELECT Balance INTO v\_from\_balance

FROM Accounts

WHERE AccountID = p\_from\_account\_id

FOR UPDATE;

IF v\_from\_balance < p\_amount THEN

RAISE\_APPLICATION\_ERROR(-20002, 'Insufficient funds.');

END IF;

UPDATE Accounts

SET Balance = Balance - p\_amount

WHERE AccountID = p\_from\_account\_id;

UPDATE Accounts

SET Balance = Balance + p\_amount

WHERE AccountID = p\_to\_account\_id;

COMMIT;

EXCEPTION

WHEN NO\_DATA\_FOUND THEN

ROLLBACK;

RAISE\_APPLICATION\_ERROR(-20003, 'Account does not exist.');

WHEN OTHERS THEN

ROLLBACK;

RAISE\_APPLICATION\_ERROR(-20004, 'Error: ' || SQLERRM);

END;

**Scenario 2:**

CREATE OR REPLACE PROCEDURE UpdateSalary (

p\_employee\_id IN NUMBER,

p\_percentage IN NUMBER

) AS

v\_current\_salary Employees.Salary%TYPE;

BEGIN

IF p\_percentage <= 0 THEN

RAISE\_APPLICATION\_ERROR(-20001, Input should be positive.');

END IF;

SELECT Salary INTO v\_current\_salary

FROM Employees

WHERE EmployeeID = p\_employee\_id

FOR UPDATE;

UPDATE Employees

SET Salary = Salary + (Salary \* p\_percentage / 100)

WHERE EmployeeID = p\_employee\_id;

COMMIT;

EXCEPTION

WHEN NO\_DATA\_FOUND THEN

ROLLBACK;

RAISE\_APPLICATION\_ERROR(-20002, 'Employee ID does not exist.');

WHEN OTHERS THEN

ROLLBACK;

RAISE\_APPLICATION\_ERROR(-20003, 'Error check the information again' || SQLERRM);

END;

**Scenario 3:**

CREATE OR REPLACE PROCEDURE AddNewCustomer (

p\_customer\_id IN NUMBER,

p\_name IN VARCHAR2,

p\_dob IN DATE,

p\_balance IN NUMBER

) AS

BEGIN

BEGIN

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

VALUES (p\_customer\_id, p\_name, p\_dob, p\_balance, SYSDATE);

COMMIT;

EXCEPTION

WHEN DUP\_VAL\_ON\_INDEX THEN

ROLLBACK;

RAISE\_APPLICATION\_ERROR(-20001, 'Customer with ID ' || p\_customer\_id || ' already exists.');

WHEN OTHERS THEN

ROLLBACK;

RAISE\_APPLICATION\_ERROR(-20002, 'Error: ' || SQLERRM);

END;

END;