**Question – 3**

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.

PL/SQL Code---

SHOW ERRORS PROCEDURE TransferFunds;

CREATE OR REPLACE PROCEDURE TransferFunds(

p\_from\_account NUMBER,

p\_to\_account NUMBER,

p\_amount NUMBER

) AS

v\_from\_balance NUMBER;

insufficient\_funds EXCEPTION;

BEGIN

-- Check if source account has sufficient balance

SELECT Balance INTO v\_from\_balance

FROM Accounts

WHERE AccountID = p\_from\_account;

IF v\_from\_balance < p\_amount THEN

RAISE insufficient\_funds;

END IF;

-- Deduct from source account

UPDATE Accounts

SET Balance = Balance - p\_amount,

LastModified = SYSDATE

WHERE AccountID = p\_from\_account;

-- Add to destination account

UPDATE Accounts

SET Balance = Balance + p\_amount,

LastModified = SYSDATE

WHERE AccountID = p\_to\_account;

INSERT INTO Transactions (TransactionID, AccountID, TransactionDate, Amount, TransactionType)

VALUES (TransactionID\_SEQ.NEXTVAL, p\_from\_account, SYSDATE, -p\_amount, 'Transfer');

INSERT INTO Transactions (TransactionID, AccountID, TransactionDate, Amount, TransactionType)

VALUES (TransactionID\_SEQ.NEXTVAL, p\_to\_account, SYSDATE, p\_amount, 'Transfer');

COMMIT;

DBMS\_OUTPUT.PUT\_LINE('Funds transferred successfully.');

EXCEPTION

WHEN insufficient\_funds THEN

ROLLBACK;

DBMS\_OUTPUT.PUT\_LINE('Error: Insufficient funds in the source account.');

WHEN OTHERS THEN

ROLLBACK;

DBMS\_OUTPUT.PUT\_LINE('Error transferring funds: ' || SQLERRM);

END TransferFunds;

/

BEGIN

INSERT INTO Accounts (AccountID, CustomerID, AccountType, Balance, LastModified) VALUES (1, 1, 'Checking', 1000, SYSDATE);

INSERT INTO Accounts (AccountID, CustomerID, AccountType, Balance, LastModified) VALUES (2, 1, 'Savings', 2000, SYSDATE);

COMMIT;

END;

/

CREATE SEQUENCE TransactionID\_SEQ START WITH 1 INCREMENT BY 1;

-- Test transferring funds with sufficient balance

BEGIN

TransferFunds(1, 2, 500);

END;

/

-- Test transferring funds with insufficient balance

BEGIN

TransferFunds(1, 2, 1500);

END;

/

-- Verify the updated balances in the Accounts table

SELECT \* FROM Accounts WHERE AccountID IN (1, 2);

-- Verify the transactions recorded

SELECT \* FROM Transactions WHERE AccountID IN (1, 2);