**2.HIERARCHICAL INHERITANCE FOR BANK**

**import java.util.Arrays;**

**import java.util.Scanner;**

**class Bank {**

**int inputDeposit() {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter the Deposit amount: ");**

**int da = sc.nextInt();**

**return da;**

**}**

**int inputWithdraw() {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter the Withdraw amount: ");**

**int wa = sc.nextInt();**

**return wa;**

**}**

**int inputTransfer() {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter the Transfer amount: ");**

**int ta = sc.nextInt();**

**return ta;**

**}**

**}**

**class Transaction extends Bank {**

**int deposit(int ta, int da) {**

**return ta + da;**

**}**

**int withdraw(int ta, int wa) {**

**return ta - wa;**

**}**

**int transfer(int ta, int tra) {**

**return ta - tra;**

**}**

**}**

**class Deposit extends Transaction {**

**void performDeposit(int total) {**

**int depAmou = inputDeposit();**

**total = deposit(total, depAmou);**

**System.out.println("Before Deposit: " + (total - depAmou));**

**System.out.println("After Deposit: " + total);**

**}**

**}**

**class Withdraw extends Transaction {**

**void performWithdraw(int total) {**

**int witAmou = inputWithdraw();**

**if (witAmou > total) {**

**System.out.println("Insufficient amount");**

**} else {**

**total = withdraw(total, witAmou);**

**System.out.println("Before Withdraw: " + (total + witAmou));**

**System.out.println("After Withdraw: " + total);**

**}**

**}**

**}**

**class Transfer extends Transaction {**

**void performTransfer(int total, int[] accountNumbers) {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter account number to transfer to: ");**

**int accNum = sc.nextInt();**

**if (Arrays.binarySearch(accountNumbers, accNum) >= 0) {**

**int traAmou = inputTransfer();**

**if (traAmou > total) {**

**System.out.println("Insufficient amount");**

**} else {**

**total = transfer(total, traAmou);**

**System.out.println("Before Transfer: " + (total + traAmou));**

**System.out.println("After Transfer: " + total);**

**}**

**} else {**

**System.out.println("Invalid account number");**

**}**

**}**

**}**

**class ShowBalance extends Transaction {**

**void displayBalance(int total) {**

**System.out.println("\nBank balance: " + total);**

**}**

**}**

**public class Main {**

**public static void main(String[] args) {**

**int total = 1000;**

**int[] accountNumbers = {1001, 1002, 1011, 1012};**

**Arrays.sort(accountNumbers);**

**Scanner sc = new Scanner(System.in);**

**Deposit deposit = new Deposit();**

**Withdraw withdraw = new Withdraw();**

**Transfer transfer = new Transfer();**

**ShowBalance showBalance = new ShowBalance();**

**int choice;**

**while (true) {**

**showBalance.displayBalance(total);**

**System.out.println("Enter choice: Deposit = '1', Withdraw = '2', Transfer = '3', Exit = '4'");**

**choice = sc.nextInt();**

**if (choice == 1) {**

**deposit.performDeposit(total);**

**} else if (choice == 2) {**

**withdraw.performWithdraw(total);**

**} else if (choice == 3) {**

**transfer.performTransfer(total, accountNumbers);**

**} else if (choice == 4) {**

**System.out.println("Exiting");**

**break;**

**} else {**

**System.out.println("Invalid choice");**

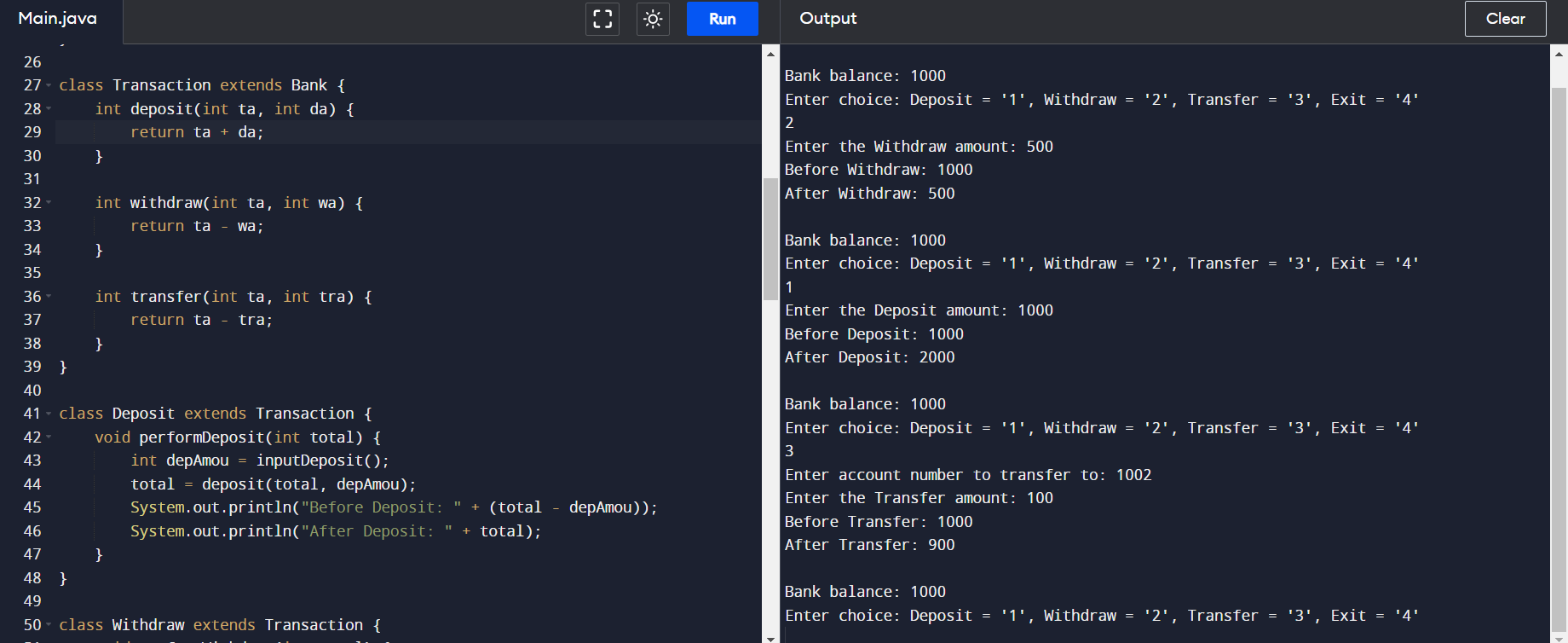
**}**

**}**

**}**

**}**

**OUTPUT:**

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