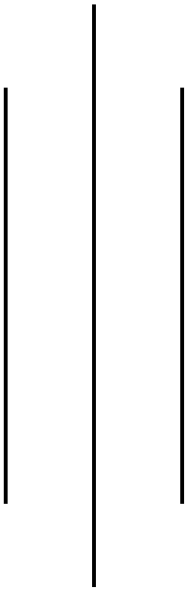
ORCHID INTERNATIONAL College

Advanced Java Programming



Lab Report: 03

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Implementation:

```
package classwork; // Uses classwork Package
import java.util.Scanner; // for reading the input from user

public class Module4{
/* Main Public function for module 4 */
	public static void main(String[] args) {
		//Implementing runtime polymorphism
		int accType; // for taking input from the user
		Account a; // Account type object for
		Scanner s = new Scanner(System.in);
		System.out.println("Enter the type of account:\n1. SB \n2. Current\n");
		accType = s.nextInt();
		if(accType == 1) {
			a = new SBAccount();
		}else {
			a = new CurrentAccount();
		}
		a.deposit(20000.0); // deposit called
		a.withdraw(3000); // withdraw called
		s.close(); // closes Scanner
	}
}

abstract class Account{
	/*
	 * Abstract Class for the Account Handling
	 * */
	double bankBalance; // Variable to hold the balance in the bank
	int accountNo; // Account No of the user
	String Name; // Name of the user
	final double minimumBalance = 2000.0; // Minimum balance - CONSTANT

	public abstract void withdraw(double amount); // abstract method for handling withdraw
	public abstract void deposit(double amount); // abstract method for handling deposit
}

final class SBAccount extends Account{
	/* Class to handle SB Accounts */
	final double interest = 0.04;
```

```
	@Override
	public void withdraw(double amount) {
		/* A function that handles the withdrawing process
		 * Parameters :
		 * <amount> : Amount to be withdrawn
		 * Returns:
		 * <Void>
		 *
		 * */
		//check if the money is available
		if(this.bankBalance > amount + 2000.0) {
			this.bankBalance -=amount;
			System.out.println("\nWithdraw successful");
			System.out.println("\nAmount Withdrawn: "+ amount);
			System.out.println("\nRemaining Balance: "+this.bankBalance);
		}else {
			System.out.println("\nWithdraw unsuccessful! System shows not enough balance.");
		}
	}

	@Override
	public void deposit(double amount) {
		/* A function that handles the depositing process
		 * Parameters :
		 * <amount> : Amount to be deposited
		 *
		 * Returns:
		 * <Void>
		 * */
		// TODO Auto-generated method stub
		this.bankBalance +=amount;
		System.out.println("\nDeposit successful.");
		System.out.println("\nAmount Deposited: "+ amount);
		System.out.println("\nRemaining Balance: "+this.bankBalance);
	}

	public void addInterest() {
		/* A function that handles the depositing process
		 * Parameters :
		 * <Void>
		 *
		 * Returns:
		 * <Void>
```

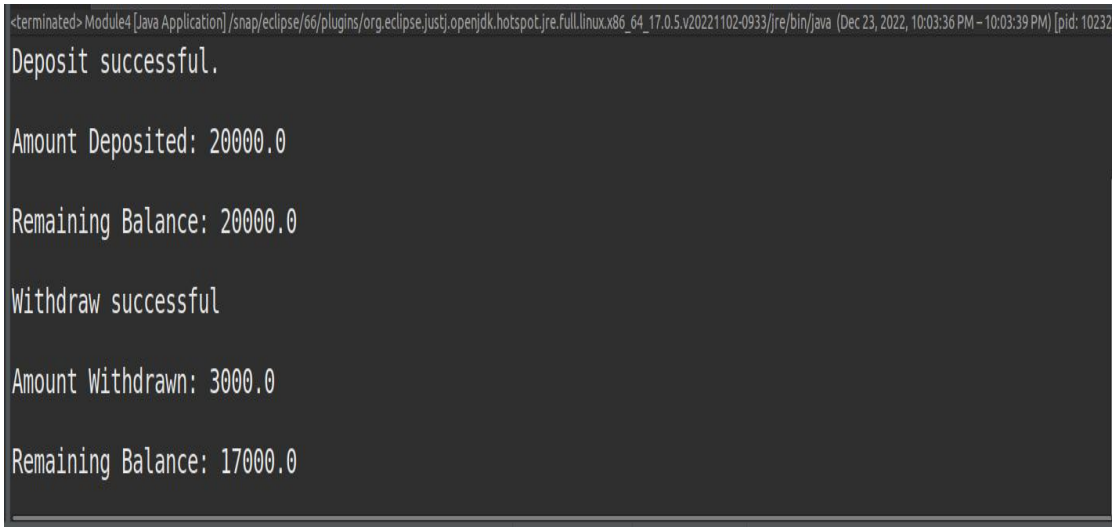
```
             * */
            this.bankBalance += this.bankBalance * this.interest /12;
            System.out.println("Interest Added");
        }
}


final class CurrentAccount extends Account{
        /* Class to handle Current Accounts */
        final double interest = 0.04;
        @Override
        public void withdraw(double amount) {
            /* A function that handles the withdrawing process
             * Parameters :
             * <amount> : Amount to be withdrawn
             * Returns:
             * <Void>
             * */
            //check if the money is available
            if(this.bankBalance > amount + 2000.0) {
                this.bankBalance -=amount;
                System.out.println("\nWithdraw successful");
                System.out.println("\nAmount Withdrawn: "+ amount);
                System.out.println("\nRemaining Balance: "+this.bankBalance);

            }else{
                System.out.println("Withdraw unsuccessful! System shows not enough
balance.");
            }
        }
        @Override
        public void deposit(double amount) {
            /* A function that handles the depositing process
             * Parameters :
             * <amount> : Amount to be deposited
             *
             * Returns:
             * <Void>
             *
            */
            this.bankBalance +=amount;
            System.out.println("\nDeposit successful");
            System.out.println("\nAmount Deposited: "+ amount);
            System.out.println("\nRemaining Balance: "+this.bankBalance);
```

```
    }
}
```

Output:


<terminated> Module4 [Java Application] /snap/eclipse/66/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.linux.x86_64_17.0.5.v20221102-0933/jre/bin/java (Dec 23, 2022, 10:03:36 PM – 10:03:39 PM) [pid: 10232
Deposit successful.
Amount Deposited: 20000.0
Remaining Balance: 20000.0
Withdraw successful
Amount Withdrawn: 3000.0
Remaining Balance: 17000.0