OOPL Assignment 11

Case Study

Name :- Atharva Kinikar
Div :- SE 10
Batch :- F 10
Roll No :- 23241

Code :-

```
/*
Name :- Atharva Kinikar
Div :- SE 10
Batch :- F10
Roll No :- F101
*/
import java.util.Scanner;

class Account { // parent class
    Scanner sc = new Scanner(System.in);

    // data members of Account class
    String name; // name of account holder
    int accno; // account number
    String type; // type of account
    double bal; // balance

    // method to get user details
    void Input() {
        System.out.println("Enter name::");
        name = sc.nextLine();

        System.out.println("Enter Account number:: ");
        accno = sc.nextInt();
        sc.nextLine();
        System.out.println("Enter type of account:: ");
        type = sc.nextLine();
```

```
        System.out.println("Enter Principal amount:: ");
        bal = sc.nextDouble();
    }

    // method to display user info
    void Display() {
        System.out.println("_____________________");
        System.out.println("Name::          " + name);
        System.out.println("Account No::        " + accno);
        System.out.println("Type::          " + type);
        System.out.println("Balance::       " + bal);
        System.out.println("_____________________");
    }

    // method to deposit money
    void Deposit() {
        double amt;
        System.out.println("Enter the amount to be
depositedt:: ");
        amt = sc.nextDouble();
        bal = bal + amt; // balance will be added in
principal amount
    }
}

class Savings extends Account { // Saving is subclass
derived from Account
    double interest;

    void compInterest() { // method to calculate compound
interest
        int time;
        double rate;
        System.out.println("Enter duration (in years):: ");
// duration in year
        time = sc.nextInt();
```

```
        System.out.println("Enter annual interest rate:: ");
// interest rate
        rate = sc.nextDouble();
        interest = bal * Math.pow(1 + rate / 100, time) -
bal; // compound interest formula
        System.out.println("The coumpount interest will be "
+ interest);
    }

    void withdrawal() { // method to withdraw money
        double amount;
        System.out.println("Enter the amount to be
withdrawn:: ");
        amount = sc.nextDouble();
        if (bal >= amount) {
            bal = bal - amount; // balance will be reduced
by money withdrawn
        } else {
            System.out.println("The amount cannot be
withdrawn!!");
        }
    }
}

class Current extends Account { // Current is Subclass
derived from Account

    double penalty;

    int minBal() {
        int ret1 = 1;
        if (bal <= 10000) {
            // if minimum balance in current account is less
than 10,000 than penalty will
            // be imposed
            penalty = 2500;
            // penalty of 2,500 will be imposed for not
maintaining minimum balance
```

```
            bal = bal - penalty;
            ret1 = 0;
        } else {
            System.out.println("No penalty imposed");
        }
        return ret1;
    }

    // method to withdraw money
    void withdrawal() {
        double amt;
        System.out.println("Enter the amount to
withdraw");// withdrawl amount
        amt = sc.nextDouble();
        int k = minBal();
        if (k == 1) {
            if (bal >= amt)
                bal = bal - amt;
        } else {
            System.out.println("The amount cannot be
withdrawn");
            // if balance is less than amount to be
withdrawn
        }

    }

    // method to deposit check
    void deposit_check() {

        System.out.println("Enter check amount");
        double check_amt = sc.nextDouble();
        bal = bal + check_amt;
        System.out.println("Your cheque has been deposited
and current balance becomes: " + bal);

    }
```

```
}

public class BankCustomer {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int ch1, ch2;
        Scanner s1 = new Scanner(System.in);

        System.out.println("---Enter the account type---");
        System.out.println("1. Savings\n2. Current");
        ch1 = s1.nextInt();
        if (ch1 == 1) {
            Savings s = new Savings(); // object creation of
savings class
            s.Input();
            int x = 1;
            do {
                System.out.println("___________");
                System.out.println(
                        "1. Deposit\n2. Display Balance\n3.
Calculate Compound interest\n4. Withdrawl\n5. Exit");
                System.out.println("___________");
                ch2 = s1.nextInt();
                switch (ch2) {
                    case 1:
                        // deposit method called
                        s.Deposit();
                        // display method called
                        s.Display();
                        break;
                    case 2:
                        // display method called
                        s.Display();
                        break;
                    case 3:
                        // interest calculate method called
                        s.compInterest();
```

```
                        break;
                    case 4:
                        // withdrawl method called
                        s.withdrawal();
                        s.Display();
                        break;
                    case 5:
                        x = 0;
                        break;

                    default:
                        System.out.println("Invalid
choice");

                }
            } while (x == 1);
        } else if (ch1 == 2) {
            Current c = new Current();
            c.Input();
            int x = 1;
            do {
                System.out.println("__________");
                System.out.println("1. Deposit\n2. Display
Balance\n3. Withdrawl\n4. Deposit Chequebook\n5. Exit");
                System.out.println("__________");
                ch2 = s1.nextInt();
                switch (ch2) {
                    case 1:
                        // deposit method called
                        c.Deposit();
                        c.Display();
                        break;
                    case 2:
                        // display method called
                        c.Display();
                        break;
                    case 3:
                        // withdrawl method called
```

```
                        c.withdrawal();
                        c.Display();
                        break;
                    case 4:
                        // deposit check method called
                        c.deposit_check();
                        c.Display();
                        break;
                    case 5:
                        x = 0;
                        break;

                    default:
                        System.out.println("Invalid
choice");

                }
            } while (x == 1);

        }

        else {
            System.out.println("Invalid choice");
        }
    }

}
```

Output :-

```
---Enter the account type---
1. Savings
2. Current
1
Enter name::
Atharva kinikar
Enter Account number::
12345678
Enter type of account::
savings
Enter Principal amount::
50000
_____________
1. Deposit
2. Display Balance
3. Calculate Compound interest
4. Withdrawl
5. Exit
_____________
1
Enter the amount to be depositedt::
10000
_____________________
Name::              Atharva kinikar
Account No::        12345678
Type::              savings
Balance::           60000.0
_____________________
_____________
1. Deposit
2. Display Balance
3. Calculate Compound interest
4. Withdrawl
5. Exit
_____________
2
_____________________
Name::              Atharva kinikar
Account No::        12345678
Type::              savings
Balance::           60000.0
_____________________
_____________
1. Deposit
2. Display Balance
```

3. Calculate Compound interest
4. Withdrawl
5. Exit

_____
3
Enter duration (in years)::
5
Enter annual interest rate::
15
The coumpount interest will be 60681.431249999965

_____
1. Deposit
2. Display Balance
3. Calculate Compound interest
4. Withdrawl
5. Exit

_____
4
Enter the amount to be withdrawn::
5000

_____
Name:: Atharva kinikar
Account No:: 12345678
Type:: savings
Balance:: 55000.0

_____
_____
1. Deposit
2. Display Balance
3. Calculate Compound interest
4. Withdrawl
5. Exit

_____
5