

Lab 5

Develop a Java Program to create a class Bank that maintains two kinds of accounts for its customers, one called savings account (provides compound interest but no check book) and other called current account (has check book and minimum balance requirement which if not met, a service charge is imposed).

Create class Account which stores name, number and type. From this derive two classes & each having specific requirements. Include methods for

- Accept deposit & update balance
- Display balance
- Compute & deposit interest
- Permit withdrawal
- Check minimum bank balance and impose penalty

```
import java.util.*;
import java.lang.Math;
```

```
abstract class Bank {
    abstract void withdraw (double amt);
    abstract void deposit (double amt);
    abstract void display ();
    abstract void merudisp ();
}
```

```
class Account extends Bank {
    String name;
    int acc - num;
    String type;
```

```
double bal;
String name = " ";
```

```
Account (String name, int acc-num, String type,
double bal, String name) {
```

```
    this.name = name;
```

```
    this.acc-num = acc-num;
```

```
    this.type = type;
```

```
    this.bal = bal;
```

```
    this.name = name;
```

```
}
```

```
public void withdraw (double amt) {
```

```
    if (amt > bal) {
```

```
        System.out.println ("Withdraw declined");
```

```
    }
```

```
    else {
```

```
        bal -= amt;
```

```
        System.out.println ("Updated bal is: "
```

```
        + bal);
```

```
    }
```

```
}
```

```
public void deposit (double amt) {
```

```
    bal += amt;
```

```
    System.out.println ("Updated bal is: " +
```

```
    amt);
```

```
}
```

```
public void display () {
```

```
    System.out.println ("Acc.name: " + this.name);
```

```
    System.out.println ("Acc.name = " + name);
```

```
    System.out.println ("Acc.type = " + type);
```

```
    System.out.println ("Acc.bal = " + bal);
```

```
}
```

```
public void main () {
```

```
    menu = "-----MENU-----\n
```

```
1. Deposit \n 2. Withdraw \n 3. Display
```

```

}
class Savings extends Account {
    double interest;
    Savings (String name, int acc-num, String type,
            double bal, String menu, double interest) {
        super (name, acc-num, type, bal, menu);
        this.interest = interest;
    }

```

```

    public double interest (int time) {
        double comp;
        comp = bal + Math.pow ((bal *
            (1 + (interest / 100))), time);
        return comp;
    }

```

```

    public void menuDisp () {
        Super.menuDisp ();
        menu += "\n 4. Compute Interest
            \n 5. Exit ";
    }
}

```

```

class Current extends Account {
    double minbal = 10000;
    int overdraftlimit = -100;
    Current (String name, int acc-num, String
        type, double bal, String menu) {
        super (name, acc-num, type, bal,
            menu);
        public void menuDisp () {
            menu += "\n 4. Cheque book
                \n 5. Exit "
        }
    }
}

```

```

public void withdraw (double amt) {
    if (amt > bal) {
        System.out.println ("Withdraw
declined !");
    }
    else {
        bal -= amt;
        if (bal < minbal) {
            bal += 0.1 * bal;
            System.out.println ("Balance
is lower than minimum balance.
10% service charge imposed ! New
balance is : " + bal);
        }
        System.out.println ("Updated balance
is : " + bal);
    }
}
}

```

```

public void checkbook (double amt) {
    if (amt <= bal && (bal - amt) >=
overdraftlimit) {
        bal -= amt;
        System.out.println ("Cheque
issued successfully. Current balance : "
+ bal);
    }
    else {
        System.out.println ("Insufficient funds");
    }
}
}
}

```

class Bank {

public static void main (String args[]) {

Scanner s = new Scanner (System.in);

String name;

String num = "";

int acc-num;

String type;

double bal = 0;

double interest;

int choice;

int time;

double money;

System.out.println ("Enter customer name:");

name = s.next();

System.out.println ("Enter account number:");

acc-num = s.nextInt();

System.out.println ("----- Account Type-----
1. Savings Account 2. Current Account

Please select account:");

type = s.next();

if (type.equals ("savings")) {

System.out.println ("Enter interest amount:");

interest = s.nextDouble();

Savings accs = new Savings (name,
acc-num, type, bal, num, interest);

do {

accs.menuDisp();

System.out.println (accs.menu);

System.out.println ("Enter choice:");

choice = s.nextInt();

switch (choice) {

case 1:

System.out.println ("Enter

amt to be deposited:");

money = s.next Double();
acc.deposit(money);
break;

case 2:

System.out.println("Enter amt.
to be withdrawn:");
money = s.next Double();
acc.withdrawal(money);
break;

case 3:

accs.display();
break;

case 4:

System.out.println("Enter
time:");
time = s.next Int();
money = accs.interest(time);
System.out.println("Compound
interest is: " + money);
break;

case 5:

break;
}

} while (choice != 5);

}

~~else if (type.equals("current")) {~~

current acc = new Current (name, acc-num,
type, bal, pass);

do {

accs.newsignup();

System.out.println(accs.menu);

System.out.println("Enter choice:");

choice = s.next Int();

switch (choice) {

case 1:

```
System.out.println("Enter amount to be deposited:");
money = s.nextInt();
acc.deposit(money);
break;
```

case 2:

```
System.out.println("Enter amount to be withdrawn:");
money = s.nextInt();
acc.withdraw(money);
break;
```

case 3:

```
acc.display();
break;
```

case 4:

```
System.out.println("Enter amount of cheque:");
money = s.nextInt();
acc.checkbook(money);
break;
```

case 5:

```
break;
```

```
} while (choice != 5);
```

```
} else {
```

```
System.out.println("Wrong type choice!");
```

```
};
```

```
}
```

Output :

Enter customer name : Sam

Enter acc. number : 1

----- Account Type -----

1. Savings account

2. Current account

Please select account : Savings

----- MENU -----

1. Deposit

2. Withdraw

3. Display

4. Compute Interest

5. Exit

Enter choice : 1

Enter amt. : 1000.0

Updated bal : 1000

Enter choice : 2

Enter amt. : 300

Updated bal : 700.0

Enter choice : 3

Acc. no : 1

Acc. name : Sam

Acc. type : Savings

Acc. bal : 700

Enter choice : 4

Enter time : 3

Compound Interest :

Enter choice : 5

(-2) Enter customer name : Sam
 Enter acc no : 2

--- Account Type ---

1. Savings Account
2. Current Account

Please select accounts : Current

--- MENU ---

1. deposit
2. withdraw
3. display
4. cheque book
5. Exit

Enter choice : ~~10000~~

Enter amount : 10000

Updated bal : 10000

Enter choice : 2

Enter amount : 1000

Balance is lower than minimum . 10% service charge imposed !

Updated balance : 8100

Enter choice : 4

Enter amt : 100

Cheque successfully issued . Updated bal : 8000

Enter choice : 5

~~000~~
 16/11/24