Lab Program 5

Develop a Java program to create a class Bank that maintains two kinds of account for its customers, one called savings account and the other current account. The savings account provides compound interest and withdrawal facilities but no cheque book facility. The current account provides cheque book facility but no interest. Current account holders should also maintain a minimum balance and if the balance falls below this level, a service charge is imposed. Create a class Account that stores customer name, account number and type of account. From this derive the classes Cur-acct and Sav-acct to make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks: a) Accept deposit from customer and update the balance. b) Display the balance. c) Compute and deposit interest d) Permit withdrawal and update the balance.

Source Code:

```java
import java.util.Scanner;

class Account
{
        String name;
        int type;
        long accno;
        double balance;
        void setA()
        {
                Scanner s=new Scanner(System.in);
```

```java
        System.out.print("Enter customer name: ");

        name=s.nextLine();


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

        accno=s.nextLong();

        System.out.print("Enter bank balance: ");

        balance=s.nextDouble();
}
void display()
{
        System.out.println("Customer name is: "+name);

        if(type==1) {

                System.out.println("Customer account type is: Savings");

        }

        else {

                System.out.println("Customer account type is: Current");

        }

        System.out.println("Customer account number is: "+accno);

        System.out.println("Current balance is: "+balance);
}
void deposit()
{
        System.out.print("Enter the amount to be deposited: ");

        Scanner x=new Scanner(System.in);

        double amt=x.nextDouble();

        balance+=amt;
```

```java
        }
}


class Sav_acct extends Account
{
        double interest;
        Scanner s=new Scanner(System.in);

        Sav_acct() {
                type=1;
        }
        void cinterest()
        {
                int timey;
                float irate;
                System.out.println("Compound Interest details:");

                System.out.println("Enter time in years: ");
                timey=s.nextInt();
                System.out.println("Enter rate of interest: ");
                irate=s.nextFloat();
                System.out.println("Interest will be compunded 5 times a year");
                interest=balance*(Math.pow((1+irate/5),(5*timey)));
                balance+=interest;
        }
```

```java
        void withdraw()

        {

                System.out.println("Enter the amount to be withdrawn: ");

                double amt=s.nextDouble();

                if(balance>amt)

                {balance-=amt;}

                else

                {System.out.println("Amount to be withdrawn greater than
balance!!!");}

        }

}


class Curr_acct extends Account

{

        double check_amt;


        Curr_acct() {

                type=2;

        }


        void cheque()

        {

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

                Scanner s=new Scanner(System.in);

                check_amt = s.nextDouble();

                if(check_amt>balance-5000)
```

```java
		{
			System.out.println("Rs. 500 penalty imposed...Is it ok to proceed? Enter y for yes and n for no");
			String option=s.next();
			if(option.equals("y")) {balance=balance-check_amt-500;}
			else {System.out.println("no check debited");}
		}
		else
		{
			System.out.println("Rupees "+check_amt+" debited");
balance-=check_amt;
		}
	}
	void withdraw()
	{
		System.out.println("Enter the amount to be withdrawn: ");
Scanner s=new Scanner(System.in);
		double amt=s.nextDouble();
		if(balance>amt)
		{balance-=amt;}
		else
		{System.out.println("Amount to be withdrawn greater than balance!!!");}
	}
}

class Bank {
```

```java
public static void main(String ss[]) {
        String op1,op2;
        Scanner s=new Scanner(System.in);
        System.out.println("1. Savings or   2. Current?");
        int q;
        q=s.nextInt();
        if(q==1) {
                Sav_acct s1 = new Sav_acct();
                while(true) {
                System.out.print("Enter the choice: \n1 .Set the values for savings acc\n2. display\n3. deposit\n4. Interest\n5. Withdraw\n6. exit\n");
                op1=s.next();
                switch(op1)
                {
                case "1":s1.setA();
                        break;
                case "2":s1.display();
                        break;
                case "3":s1.deposit();
                        break;
                case "4":s1.cinterest();
                        break;
                case "5":s1.withdraw();
                        break;
                case "6":System.exit(0);
                }
                }
```

```java
            }
            else if(q==2) {
                Curr_acct c1 = new Curr_acct();
                while(true) {
                System.out.print("Enter the choice: \n1.Set the values for current account\n2. display\n3. deposit\n4. transferCheck\n5. Withdraw\n6. exit\n");
                    op2=s.next();
                    switch(op2)
                    {
                    case "1":c1.setA();
                            break;
                    case "2":c1.display();
                            break;
                    case "3":c1.deposit();
                            break;
                    case "4":c1.cheque();
                            break;
                    case "5":c1.withdraw();
                            break;
                    case "6":System.exit(0);
                    }
                }
            }
        }
    }
```

Output:

```
C:\Windows\System32\cmd.e  X    +  ∨

Microsoft Windows [Version 10.0.22621.1105]
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C:\Javaprog>javac Bank.java

C:\Javaprog>java Bank
1. Savings or   2. Current?
1
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
1
Enter customer name: Krishn
Enter account number: 34533
Enter bank balance: 10000
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
2
Customer name is: Krishn
Customer account type is: Savings
Customer account number is: 34533
Current balance is: 10000.0
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
|
```

```
C:\Windows\System32\cmd.e  X    +  ∨

4. Interest
5. Withdraw
6. exit
5
Enter the amount to be withdrawn:
4500
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
2
Customer name is: Krishn
Customer account type is: Savings
Customer account number is: 34533
Current balance is: 5500.0
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
4
Compound Interest details:
Enter time in years:
2
Enter rate of interest:
3.5
Interest will be compunded 5 times a year
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
|
```

```
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
1
Enter customer name: Shaswat
Enter account number: 43422
Enter bank balance: 10000
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
4
Enter the cheque amount: 3425
Rupees 3425.0 debited
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Shaswat
Customer account type is: Current
Customer account number is: 43422
Current balance is: 6575.0
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
```

```
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Shaswat
Customer account type is: Current
Customer account number is: 43422
Current balance is: 6575.0
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
3
Enter the amount to be deposited: 6900
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Shaswat
Customer account type is: Current
Customer account number is: 43422
Current balance is: 13475.0
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
```