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 Curr-acct and Sav-acct to make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks: • Accept deposit from customer and update the balance. • Display the balance. • Compute and deposit interest • Permit withdrawal and update the balance • Check for the minimum balance, impose penalty if necessary and update the balance.

```
import java.util.Scanner;


class Account
{
        String cust_name;
        int acc_num;
        String acc_type;
        double balance;
        Scanner in = new Scanner(System.in);
        Account(String cust_name,int acc_num,String acc_type,double balance)
      {
                this.cust_name = cust_name;
                this.acc_num = acc_num;
                this.acc_type = acc_type;
                this.balance = balance;
        }
        void Customer()
```

```
        {
                System.out.println("The " + this.acc_type + " status is:");
                System.out.println("Customer Name: "+this.cust_name);
                System.out.println("Account number:  "+this.acc_num);
                System.out.println("Account Type:  "+this.acc_type);
        }
        void Balance_Status()
      {
                System.out.println("Balance Amount: "+this.balance);
        }
        void Deposit()
        {
                System.out.println("Enter deposit amount : ");
                double deposit= in.nextDouble();
                balance+=deposit;
        }
}

class Savings extends Account
{
      double withdraw;
        double deposit;
        int rate, time;
        double bal, cinterest;
        Savings(String cust_name,int acc_num,String acc_type,double balance)
        {
                super(cust_name,acc_num,acc_type,balance);
        }
```

```
Scanner in = new Scanner(System.in);
void Compound_Interest()
{
        System.out.println("Compound interest : ");
        System.out.println("Enter rate of interest : ");
        rate = in.nextInt();
        System.out.println("Enter time in years : ");
        time = in.nextInt();
        bal = balance*Math.pow(1+(rate*0.01),time);
        cinterest = bal - balance;
        System.out.println("Compound interest is : " + cinterest);
        balance = bal;
}
void Withdraw()
{
        System.out.println("Enter the amount to be withdrawn : ");
        withdraw = in.nextDouble();
    if(balance<withdraw)
        {
                System.out.println("Not enough balance. Cannot withdraw.");
          withdraw=0.0;
        }
        else
        {
                balance -= withdraw;
        }
        System.out.println("Amount withdrawn = " + withdraw);
}
```

```
}

class Current extends Account
{
	double withdraw;
	double deposit;
	double min_balance = 5000;
	Scanner in = new Scanner(System.in);
	Current(String cust_name,int acc_num,String acc_type,double balance)
	{
		super(cust_name,acc_num,acc_type,balance);
	}
	void Withdraw()
	{
		System.out.println("Enter the amount to be withdrawn : ");
		withdraw = in.nextDouble();
		if(balance<withdraw)
		{
			System.out.println("Not enough balance. Cannot withdraw.");
			withdraw=0.0;
		}
		else
		{
			balance -= withdraw;
		}
		System.out.println("Amount withdrawn = " + withdraw);
	}
	void Minimum_balance()
```

```
	{
		if(balance<min_balance)
		{
			System.out.println("Since balance amount is less than the minimum balance, service charge of 500 is imposed.");
			balance = balance - 500;
		}
	}
}

public class Bank
{
	public static void main(String args[])
	{
		String cust_name;
		int acc_num;
		int type;
		double balance;
		Scanner xx = new Scanner(System.in);
		System.out.println("Enter Customer Name : ");
		cust_name = xx.next();
		System.out.println("Enter Account Number : ");
		acc_num = xx.nextInt();
			System.out.println("Enter Account Type : ");
			System.out.println("1. Savings Account");
			System.out.println("2. Current Account");
			type = xx.nextInt();
			if(type==1)
			{
```

```
                    System.out.println("Enter the balance amount : ");
                    balance = xx.nextInt();
                    Savings s = new
Savings(cust_name,acc_num,"Savings",balance);
                    s.Customer();
                    s.Balance_Status();
                    s.Deposit();
                    s.Balance_Status();
                    s.Withdraw();
                    s.Balance_Status();
                    s.Compound_Interest();
                    s.Customer();
                    s.Balance_Status();
                }
                else if(type==2)
                {
                    System.out.println("Enter the balance amount : ");
                    balance = xx.nextInt();
                    Current c = new
Current(cust_name,acc_num,"Current",balance);
                    c.Customer();
                    c.Balance_Status();
                    c.Deposit();
                    c.Balance_Status();
                    c.Withdraw();
                    c.Balance_Status();
                    c.Minimum_balance();
                    c.Customer();
                    c.Balance_Status();
```

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

Command Prompt

```
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C:\Users\SAKSHI>cd C:\Users\SAKSHI\JAVA PROGRAMS

C:\Users\SAKSHI\JAVA PROGRAMS>javac Bank.java

C:\Users\SAKSHI\JAVA PROGRAMS>java Bank
Enter Customer Name :
Sakshi
Enter Account Number :
248298
Enter Account Type :
1. Savings Account
2. Current Account
1
Enter the balance amount :
20500
The Savings status is:
Customer Name: Sakshi
Account number:  248298
Account Type:  Savings
Balance Amount: 20500.0
Enter deposit amount :
10000
Balance Amount: 30500.0
Enter the amount to be withdrawn :
40000
Not enough balance. Cannot withdraw.
Amount withdrawn = 0.0
Balance Amount: 30500.0
Compound interest :
Enter rate of interest :
4
Enter time in years :
5
Compound interest is : 6607.913523200004
The Savings status is:
Customer Name: Sakshi
Account number:  248298
Account Type:  Savings
Balance Amount: 37107.913523200004

C:\Users\SAKSHI\JAVA PROGRAMS>
```

Command Prompt

```
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C:\Users\SAKSHI\JAVA PROGRAMS>javac Bank.java

C:\Users\SAKSHI\JAVA PROGRAMS>java Bank
Enter Customer Name :
Sakshi
Enter Account Number :
284294
Enter Account Type :
1. Savings Account
2. Current Account
2
Enter the balance amount :
30500
The Current status is:
Customer Name: Sakshi
Account number:  284294
Account Type:  Current
Balance Amount: 30500.0
Enter deposit amount :
3000
Balance Amount: 33500.0
Enter the amount to be withdrawn :
30000
Amount withdrawn = 30000.0
Balance Amount: 3500.0
Since balance amount is less than the minimum balance, service charge of 500 is imposed.
The Current status is:
Customer Name: Sakshi
Account number:  284294
Account Type:  Current
Balance Amount: 3000.0

C:\Users\SAKSHI\JAVA PROGRAMS>
```