LAB-5

Q. 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: a) Accept deposit from customer and update the balance.

Program:

```
import java.util.*;

import java.lang.Math;

class Account

{

        String name;

        int acctno;

        char type;

        double balance;

        double dep;

        boolean cheq;


        void get(char c)

        {

                type = c;
```

```
            if(c=='s' || c == 'S')
            cheq=false;
            else cheq=true;
            Scanner sc = new Scanner(System.in);
            System.out.println("Enter your name");
            name = sc.nextLine();
            System.out.println("Enter the account number");
            acctno = sc.nextInt();
            System.out.println("Enter the current available balance in your
account");
            balance= sc.nextDouble();
        }

        void putd()
        {
            System.out.println("Account details");
            System.out.println("Name: "+name);
            System.out.println("Account number: "+acctno);
            System.out.println("Account type :"+type);
            System.out.println("balance: "+balance);
        }
        void dep()
        {
                        Scanner ss = new Scanner(System.in);
                        System.out.println("Enter the amount to be
deposited");
                        dep= ss.nextDouble();
```

```
                balance=balance +dep;
                System.out.println("Amount has been deposited and
balance has been updated");
        }
        void display()
        {

                System.out.println("Balance amount is "+balance);
        }

        void check()
        {
                if(cheq==false)
                System.out.println("Cheque book facility is not
available");
                else
                System.out.println("Cheque book facility is
available");

        }


}

class Saving extends Account
{
```

```
        double rate;

        double s_with;
        int n;

        int ch;
        double amt;
        double term;
        double pr;



        void ci()
        {
                                Scanner ss = new Scanner(System.in);
                                System.out.println("Enter principal deposit
amount");
                                pr = ss.nextDouble();
                                System.out.println("Enter the rate of interest");
                                rate = ss.nextDouble();
                                System.out.println("Enter the term(years)");
                                term = ss.nextDouble();
                                System.out.println("Enter the number of times
interest in compounded annually");
                                n = ss.nextInt();
                                amt = pr* Math.pow((1+(rate/100)),(n*term));
                                balance+= amt;
```

```
                                        System.out.println("Interest is compounded
and deposited; balance is updated");


        }


        void with_s()
        {


                                Scanner ss = new Scanner(System.in);
                                System.out.println("Enter the amount of money to be
withdrawn");
                                s_with = ss.nextDouble();
                                if(s_with>balance)
                                System.out.println("Insufficient balance");
                                else
                                {balance= balance - s_with;
                                System.out.println("Money has been withdrawn and
balance has been updated");}
        }









}


class Current extends Account
```

```
{

        double c_with;
        double pen;
        double min;
        Current()
        {
                pen=100;
                min=500;
        }

        void with_c()
        {
                                Scanner xx = new Scanner(System.in);
                                System.out.println("Enter the amount to be
withdrawn");
                                c_with= xx.nextDouble();
                                if(c_with>balance)
                                {System.out.println("Insufficient funds!");
                                return;}
                                else
                                {balance= balance- c_with;
                                System.out.println("Amount has been withdrawn and
balance has been updated");}
                                if(balance<min)
                                {
```

```
                                        System.out.println("Balance is below the
minimum threshold. Service penalty charge = 100/- .");
                                        if(balance<pen)
                                        System.out.println("Due to insufficient funds,
penalty charge will be deducted from account after replenishing. Current
balance is "+balance);
                                        else
                                        {
                                                balance= balance-pen;
                                                System.out.println("Penalty charge has
been deducted from account balance. Current balance is "+balance);
                                        }
                                }
        }



}


class account1
{
        public static void main(String sss[])
        {
                int cch, chh;
                Scanner sx = new Scanner(System.in);
                System.out.println("Choose account type: \n1- Savings \n2-
Current");
                int ch= sx.nextInt();
                if(ch==1)
```

```
{
        Saving s = new Saving();
        s.get('S');
        do{
        System.out.println("1. Deposit your money\n2. Calculate the compound interest\n3. Withdraw your money\n4. Display the current balance\n5. Cheque book facility\n6. Exit");
        System.out.println("Please enter your choice: ");
        chh= sx.nextInt();
        switch(chh)
        {
            case 1:
            s.dep();
            break;

            case 2:
            s.ci();
            break;

            case 3:
            s.with_s();
            break;

            case 4:
            s.display();
            break;
```

```
                    case 5:
                    s.check();
                    break;

                    case 6:
                    break;

                    default:
                    System.out.println("Wrong option.");
                    break;
                }
                }while(chh!=6);

            }
            else if(ch==2)
            {
                Current cr = new Current();
                cr.get('C');
                do{
                System.out.println("1. Deposit your money\n2. Chequebook facility\n3. Withdraw your money\n4. Display the current balance\n5. Exit");
                cch= sx.nextInt();
                switch(cch)
                {
                    case 1:
                    cr.dep();
                    break;
```

```
                case 2:
                cr.check();
                break;

                case 3:
                cr.with_c();
                break;

                case 4:
                cr.display();
                break;

                case 5:
                break;

                default:
                System.out.println("Wrong option.");
                break;
        }
}while(cch!=5);



}
else System.out.println("Wrong!");
```

```
        }
}
```

```
Microsoft Windows [Version 10.0.19042.630]
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C:\Users\LEGION>d:

D:\>javac account1.java

D:\>java account1
Choose account type:
1- Savings
2- Current
1
Enter your name
george
Enter the account number
12345678
Enter the current available balance in your account
20000
1. Deposit your money
2. Calculate the compound interest
3. Withdraw your money
4. Display the current balance
5. Cheque book facility
6. Exit
Please enter your choice:
2
Enter principal deposit amount
5
Enter the rate of interest
7
Enter the term(years)
3
Enter the number of times interest in compounded annually
6
Interest is compounded and deposited; balance is updated
1. Deposit your money
2. Calculate the compound interest
3. Withdraw your money
4. Display the current balance
5. Cheque book facility
6. Exit
Please enter your choice:
4
Balance amount is 20016.899661378662
1. Deposit your money
2. Calculate the compound interest
3. Withdraw your money
4. Display the current balance
5. Cheque book facility
6. Exit
Please enter your choice:
```