Lab 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

Check for the minimum balance, impose penalty if necessary and update the balance.

Complete the observation and execution of both the above programs tomorrow.

Code:

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



class account
{
        String name=new String();
        int accno;
        double bal;
        Scanner s=new Scanner(System.in);
```

```
		void set()
		{
			System.out.println("Enter customer name");
			name=s.nextLine();
			System.out.println("Enter "+name+"'s account number");
			accno=s.nextInt();
			System.out.println("Enter balance amount ");
			bal=s.nextDouble();
		}
		void display()
		{
			System.out.println("Customer Name:"+name);
			System.out.println("Your account number:"+accno);
			System.out.println("Your Account Balance:"+bal);
		}
	account(){}
}

class savacct extends account
{
	Scanner s=new Scanner(System.in);
	savacct()
	{
		System.out.println("Cheque Facility not available ");
	}
	void deposit()
	{
		int ch;
		double amt;
```

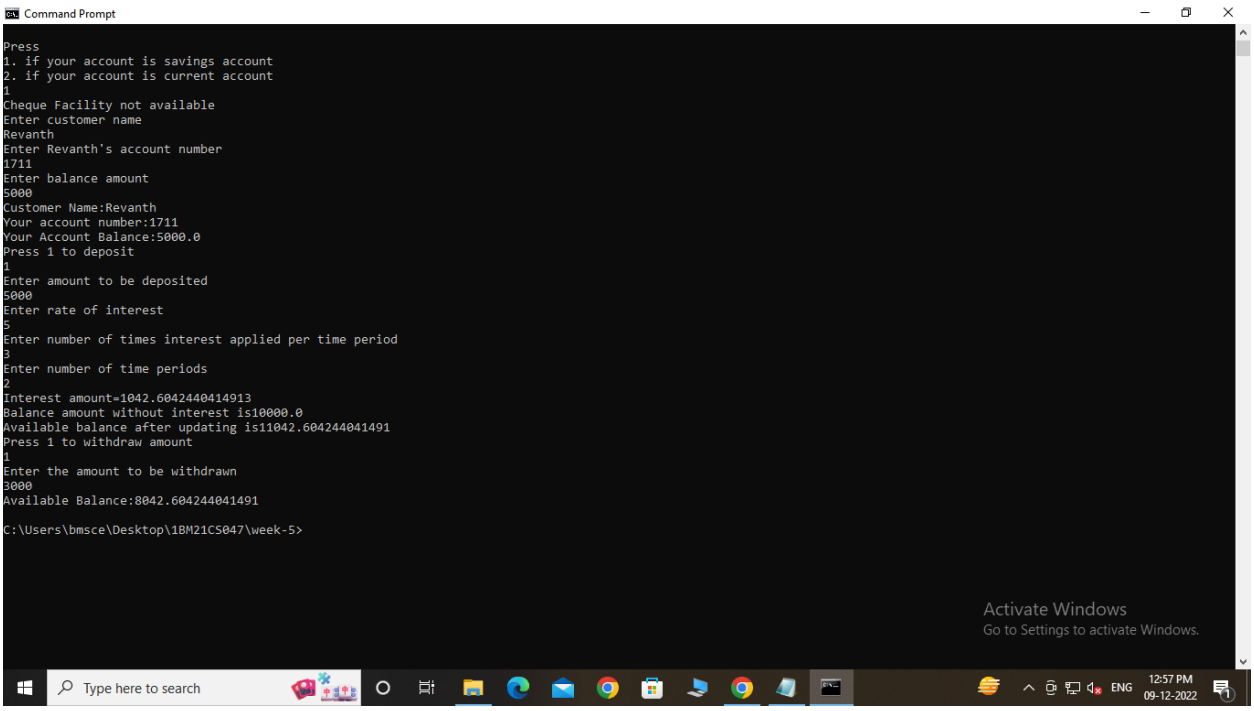
```
                System.out.println("Press 1 to deposit ");
                ch=s.nextInt();
                if(ch==1)
                {
                        System.out.println("Enter amount to be deposited ");
                        amt=s.nextDouble();
                        bal=bal+amt;
                }
                else
                        System.out.println("Invalid Input");
        }
        void in()
        {
                System.out.println("Enter rate of interest ");
                double r=s.nextDouble();
                r=r/100;
                System.out.println("Enter number of times interest applied per time period");
                int n=s.nextInt();
                System.out.println("Enter number of time periods");
                int t=s.nextInt();
                double x=(1+(r/n));
                double ci=bal*Math.pow(x,(n*t));
                System.out.println("Interest amount="+(ci-bal)+" \nBalance amount without interest
is"+bal);
                bal=ci;
                System.out.println("Available balance after updating is"+bal);
        }
        void wd()
        {
```

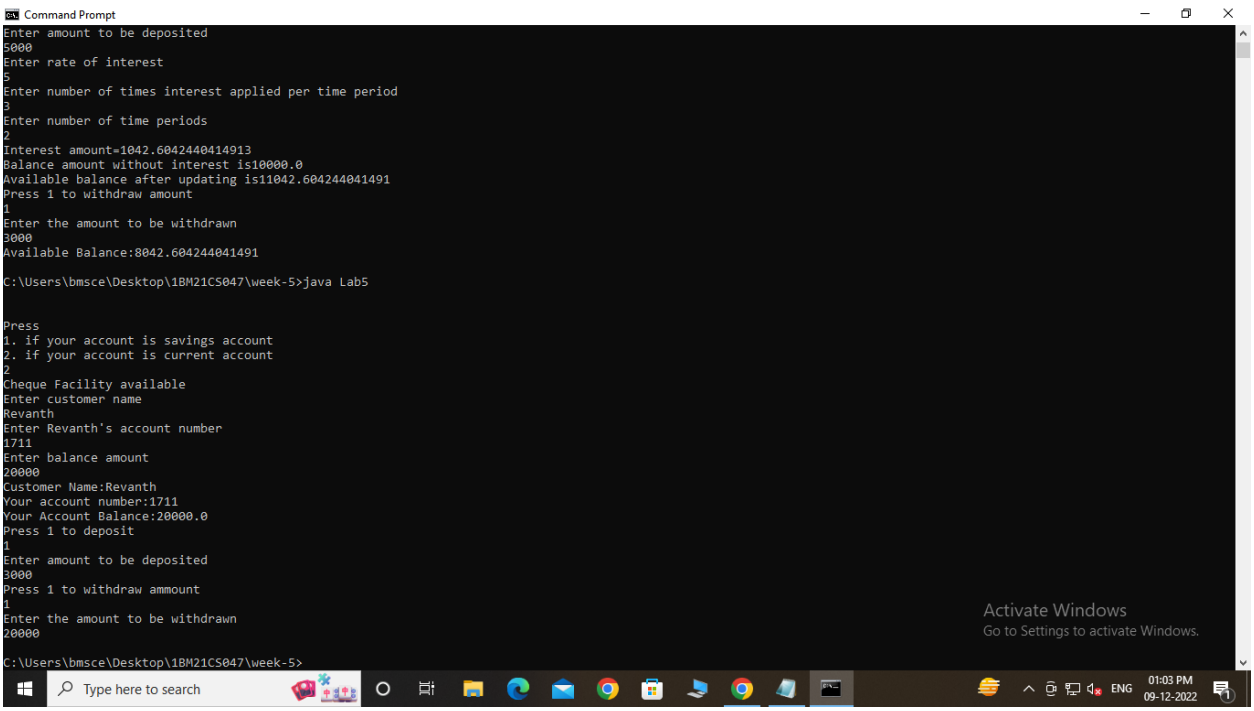
```
                System.out.println("Press 1 to withdraw amount");
                int ch=s.nextInt();
                if(ch==1)
                {
                System.out.println("Enter the amount to be withdrawn ");
                double wdraw=s.nextDouble();
                if(wdraw<=bal)
                {
                bal=bal-wdraw;
                System.out.println("Available Balance:"+bal);
                }
                }
                else System.out.println("Invalid input");
        }
}

class curacct extends account
{
        Scanner s=new Scanner(System.in);
        curacct()
        {
                System.out.println("Cheque Facility available ");
        }
        void deposit()
        {
                int ch;
                double amt;
                System.out.println("Press 1 to deposit ");
                ch=s.nextInt();
```

```
                if(ch==1)
                {
                        System.out.println("Enter amount to be deposited ");
                        amt=s.nextDouble();
                        bal=bal+amt;
                }
                else
                        System.out.println("Invalid Input");
        }
void wd()
        {
                double wdraw;
                System.out.println("Press 1 to withdraw ammount");
                int ch=s.nextInt();
                if(ch==1)
                {
                System.out.println("Enter the amount to be withdrawn ");
                wdraw=s.nextDouble();
                bal=bal-wdraw;
                if(bal<1000)
                {
                        System.out.println("You are running out of minimum balance \nAmount of rs 50
will be deducted as service charge for having low balance ");
                        System.out.println("Do you want to continue with your transaction with
fine?\nPress 1 if yes ");
                        int op=s.nextInt();
                        if(op==1)
                        {
                        bal=bal-50;
```

```
                        System.out.println("Your Available Balance:"+bal);
                        }
                        else
                        {
                        System.out.println("your transaction is cancelled ");
                        bal=bal+wdraw;
                        }
                }
                }
                else System.out.println("Invalid input");
        }

}

class Lab5
{
public static void main(String xx[])
{
        Scanner s=new Scanner(System.in);
        int ch;
        System.out.println("\n\nPress\n1. if your account is savings account \n2. if your account is
current account");
        ch=s.nextInt();
        switch(ch)
        {
                case 1:
                                savacct s1=new savacct();
                                s1.set();
                                s1.display();
```

```
                    s1.deposit();
                    s1.in();
                    s1.wd();
                    break;
            case 2:
                    curacct c1=new curacct();
                    c1.set();
                    c1.display();
                    c1.deposit();
                    c1.wd();
                    break;
            default :   System.exit(0);
        }
}
}
```




Command Prompt
Enter amount to be deposited
5000
Enter rate of interest
5
Enter number of times interest applied per time period
3
Enter number of time periods
2
Interest amount=1042.6042440414913
Balance amount without interest is10000.0
Available balance after updating is11042.604244041491
Press 1 to withdraw amount
1
Enter the amount to be withdrawn
3000
Available Balance:8042.604244041491
C:\Users\bmsce\Desktop\1BM21CS047\week-5>java Lab5
Press
1. if your account is savings account
2. if your account is current account
2
Cheque Facility available
Enter customer name
Revanth
Enter Revanth's account number
1711
Enter balance amount
20000
Customer Name:Revanth
Your account number:1711
Your Account Balance:20000.0
Press 1 to deposit
1
Enter amount to be deposited
3000
Press 1 to withdraw ammount
1
Enter the amount to be withdrawn
20000
C:\Users\bmsce\Desktop\1BM21CS047\week-5>
Activate Windows
Go to Settings to activate Windows.
Type here to search
ENG
01:03 PM
09-12-2022

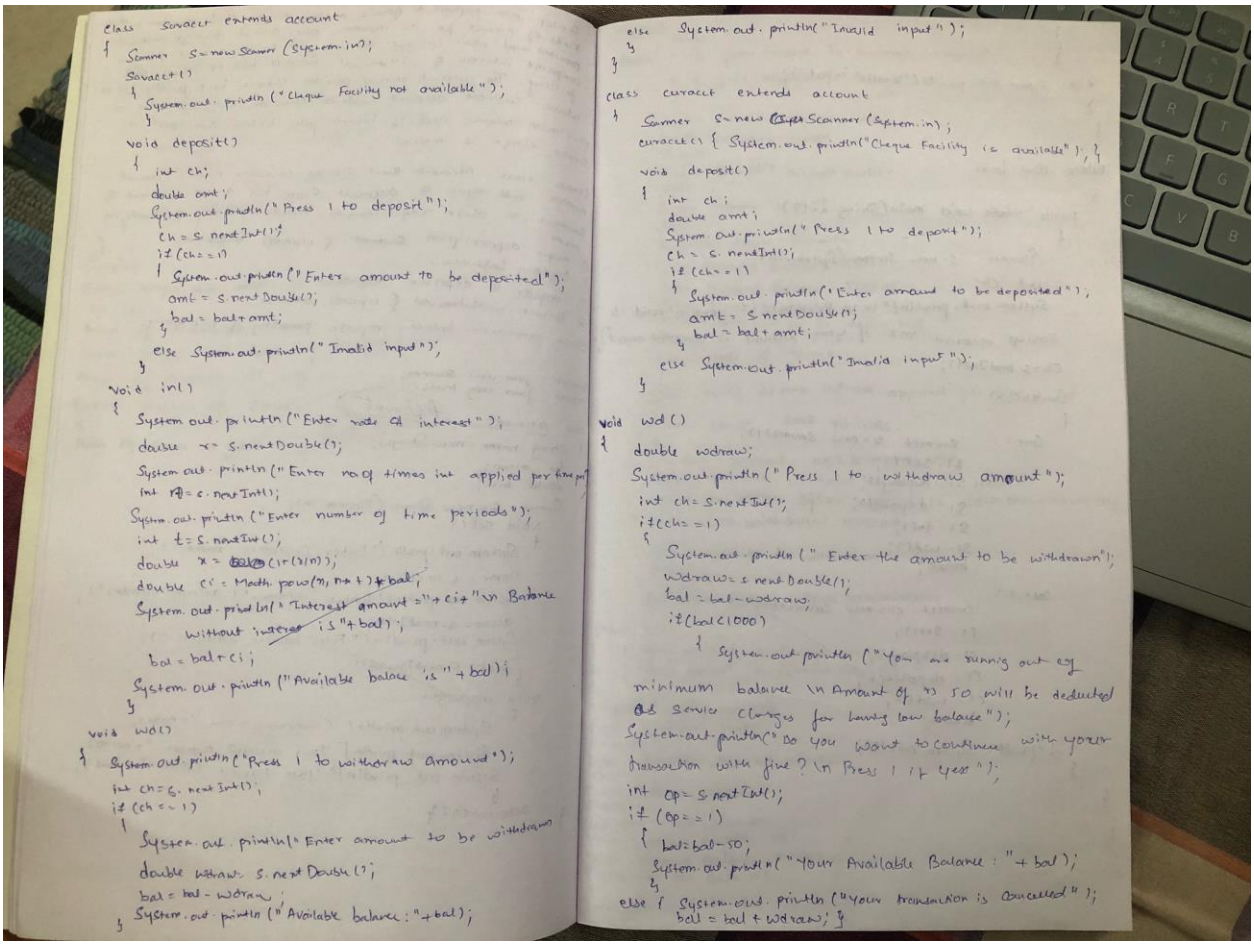
5. Develop java program to create a class bank that maintains two kinds of account for its customers, one called Savings account and other current account. The savings account provide compound interest & withdrawal facilities but no Cheque book facility. The current account provides Cheque book facility but no interest. Current account holders should also maintain a minimum balance and if balance falls below this level, a service charge is imposed.

Create class Account that stores customer name, account number and type of account. From this derive current & Savaccnt to their requirements. Include necessary methods in order.

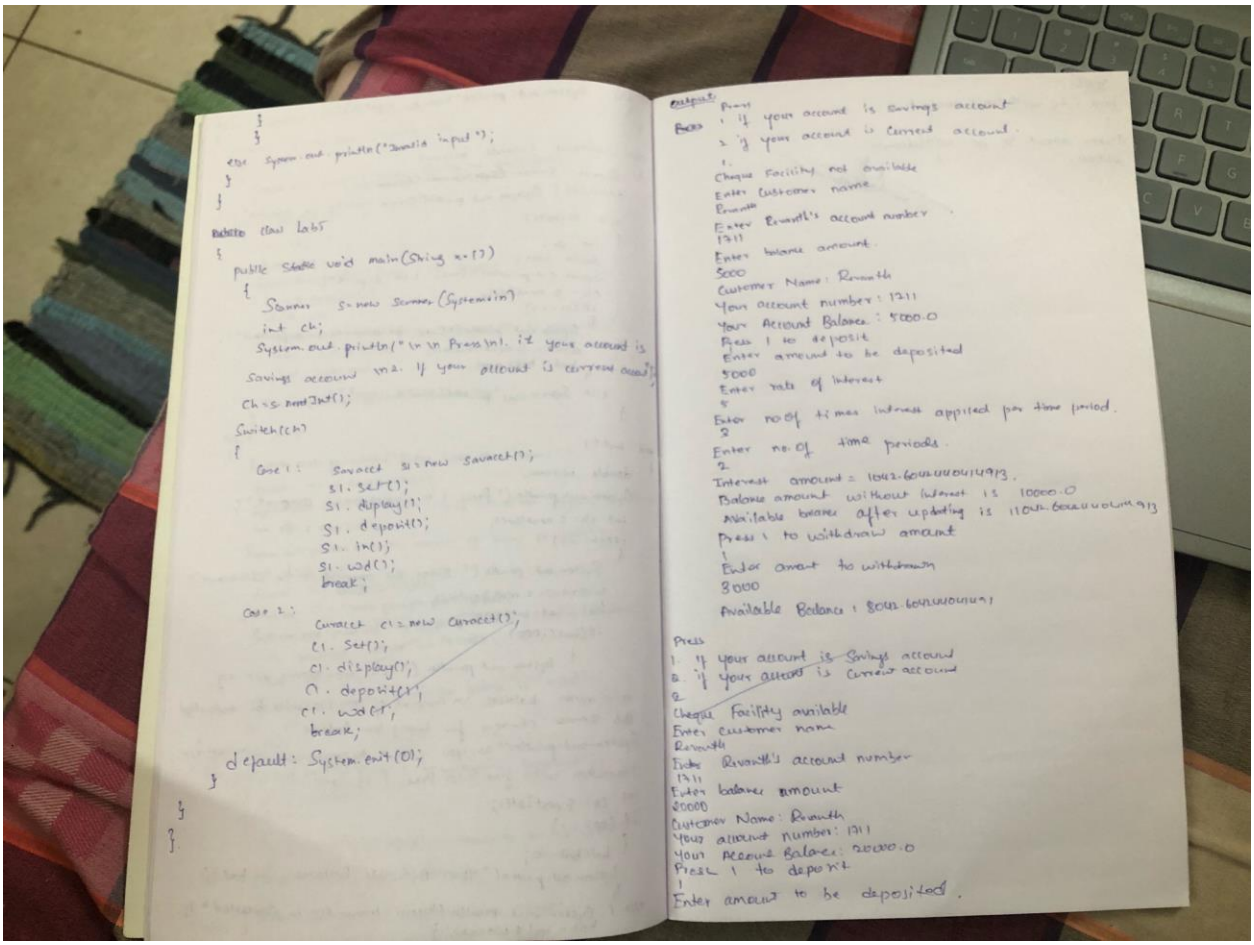
(a) Accpt deposit from customer & update balance
(b) Display balance.
(c) Compute & deposit interest.
(d) Permit withdrawal & update balance.

Check minimum balance, impose penalty if necessary.

```
import java.util.Scanner;
import java.lang.Math;
class account                    Account
{ String name=new String();
  int accno;
  double bal;
  Scanner s=new Scanner(System.in);
    void set()
    { System.out.println("Enter Customer name");
      name=s.nextLine();
      System.out.println("Enter "+name+"'s account number");
      accno=s.nextInt();
      System.out.println("Enter balance amount");
      bal=s.nextDouble();
    }
   void display()
    {
      System.out.println("Customer Name:"+name);
      System.out.println("Your account number:"+accno);
      System.out.println("Your Account Balance:"+bal);
    }
  account(){}
}
```



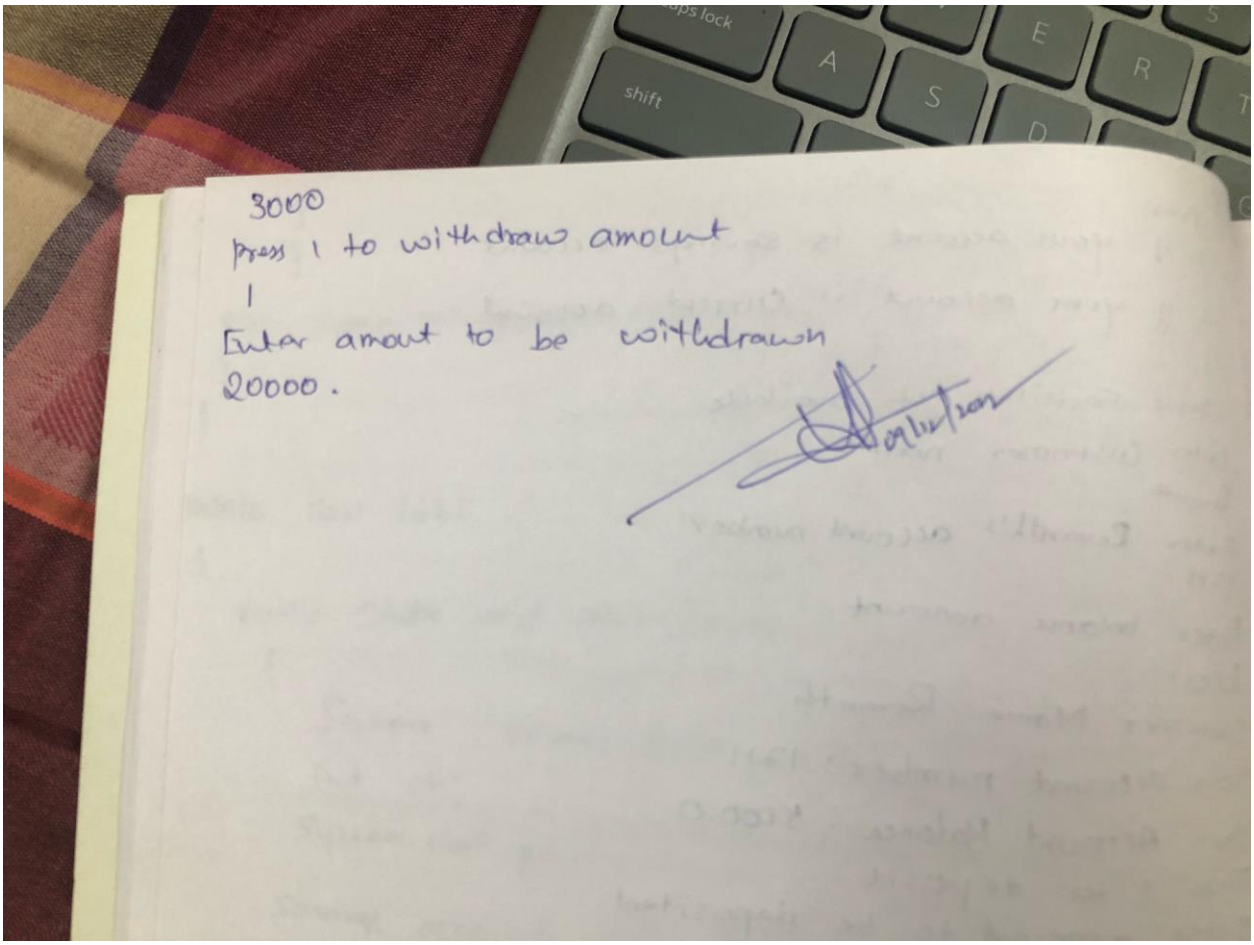
```
class savacct extends account
{ Scanner S=new Scanner(System.in);
  savacct()
   { System.out.println("Cheque Facility not available");
   }
  void deposit()
   { int ch;
     double amt;
     System.out.println("Press 1 to deposit");
     ch=S.nextInt();
     if(ch==1)
     { System.out.println("Enter amount to be deposited");
       amt=S.nextDouble();
       bal=bal+amt;
     }
     else System.out.println("Invalid input");
   }
 void int()
 {
   System.out.println("Enter rate of interest");
   double r=S.nextDouble();
   System.out.println("Enter no of times int applied per time pd");
   int n=c.nextInt();
   System.out.println("Enter number of time periods");
   int t=S.nextInt();
   double x=(1+(r/n));
   double ci=Math.pow(n,n*t)*bal;
   System.out.println("Interest amount="+ci+"in Balance
        without interest is"+bal);
   bal=bal+ci;
   System.out.println("Available balance is"+bal);
  }
void wd()
{ System.out.println("Press 1 to withdraw amount");
  int ch=S.nextInt();
  if(ch==1)
  {
    System.out.println("Enter amount to be withdrawn
    double wdraw=S.nextDouble();
    bal=bal-wdraw;
  System.out.println("Available balance:"+bal);
  else System.out.println("Invalid input");
 }

class curracct extends account
 { Scanner S=new Scanner(System.in);
   curracct(){ System.out.println("Cheque Facility is available");}
   void deposit()
   { int ch;
     double amt;
     System.out.println("Press 1 to deposit");
     ch=S.nextInt();
     if(ch==1)
     { System.out.println("Enter amount to be deposited");
       amt=S.nextDouble();
       bal=bal+amt;
     }
     else System.out.println("Invalid input");
   }
void wd()
{ double wdraw;
  System.out.println("Press 1 to withdraw amount");
  int ch=S.nextInt();
  if(ch==1)
  {
    System.out.println("Enter the amount to be withdrawn");
    wdraw=S.nextDouble();
    bal=bal-wdraw;
    if(bal<1000)
      { System.out.println("You are running out of
minimum balance\n Amount of Rs 50 will be deducted
as service charges for having low balance");
System.out.println("Do you want to continue with your
transaction with fine? \n Press 1 if yes");
int op=S.nextInt();
if(op==1)
 { bal=bal-50;
   System.out.println("Your Available Balance:"+bal);
 }
else { System.out.println("Your transaction is cancelled");
       bal=bal+wdraw;}
```



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

Public class Lab5
{
 public static void main(String x[])
  {
    Scanner s=new Scanner(System.in)
    int ch;
    System.out.println("\n\n Press1. if your account is
    Savings account 2. if your account is current account");
    ch=s.nextInt();
    Switch(ch)
    {
      Case 1:   Savacct s1=new Savacct();
                s1.set();
                s1.display();
                s1.deposit();
                s1.in();
                s1.wd();
                break;

      Case 2:
                Curracct c1=new Curracct();
                c1.set();
                c1.display();
                c1.deposit();
                c1.wd();
                break;
    default: System.exit(0);
}
 }
}
```

Output:

```
Press
1. if your account is Savings account
2. if your account is Current account
1.
Cheque Facility not available
Enter Customer name
Ramesh
Enter Ramesh's account number
1211
Enter balance amount
5000
Customer Name: Ramesh
Your account number: 1211
Your Account Balance: 5000.0
Press 1 to deposit
Enter amount to be deposited
5000
Enter rate of interest
8
Enter no of times interest applied per time period.
2
Enter no. of time periods.
2
Interest amount = 1042.6048000000014913.
Balance amount without interest is 10000.0
Available balance after updating is 11042.604800000014913
Press 1 to withdraw amount
1
Enter amount to withdrawn
8000
Available Balance : 3042.604800000014913

Press
1. if your account is Savings account
2. if your account is Current account
2
Cheque Facility available
Enter customer name
Ramesh
Enter Ramesh's account number
1211
Enter balance amount
20000
Customer Name: Ramesh
Your account number: 1211
Your Account Balance: 20000.0
Press 1 to deposit
1
Enter amount to be deposited.
```



3000
press 1 to withdraw amount
1
Enter amount to be withdrawn
20000.