Lab program-5

Develop a Java program to create a class Bank that maintains two kinds of account for its customers, one called a savings account and the other a 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

```
import java.util.*;

import java.lang.Math;

class bank {

Scanner sc = new Scanner(System.in);

String name;

int acc_no;

float bal,si;

void accept() {

System.out.println("Enter your name");

name = sc.nextLine();

System.out.println("Enter the balance amount");

bal = sc.nextFloat();
```

```
}
void display() {
System.out.println("Name : "+name);
}
void deposit() {
float amount;
int choice;
System.out.println("Do you want to deposit(1 for yes ,2 for no)");
choice = sc.nextInt();
if(choice==1) {
System.out.println("Enter the amount to be deposited");
amount = sc.nextFloat();
if(amount > bal) {
System.out.println("Amount in bank insufficient");
}
else {
bal = bal + amount;
}
System.out.println("Current balance : "+bal);
}
}
}
class current extends bank {
int service_fee = 50;
void cheque() {
System.out.println("Cheque service available");
```

```
}
void withdrawal() {
float amt;
System.out.println("Enter the amount to be withdrawn");
amt = sc.nextFloat();
if(amt>bal)
System.out.println("Balance insufficient");
else {
bal = bal - amt;
if(bal<1000) {
bal = bal - service_fee;
System.out.println("50 rs is taken as service fee");
}
System.out.println("Withdrawn : "+amt);
System.out.println("Current balance : "+bal);
}
}
}
class savings extends bank {
void cheque() {
System.out.println("Cheque service not available");
}
void withdrawal() {
float amt;
System.out.println("Enter the amount to be withdrawn");
amt = sc.nextFloat();
```

```
if(amt>bal)
System.out.println("Balance insufficient");
else
bal = bal - amt;
System.out.println("Withdrawn : "+amt);
System.out.println("Current balance : "+bal);
}
void interest() {
System.out.println("Enter the rate of interest");
int r = sc.nextInt();
System.out.println("Enter the number of times interest applied per time period");
int n = sc.nextInt();
System.out.println("Enter the time elapsed");
int t = sc.nextInt();
si = bal*(1+(r/n));
System.out.println("Compound interest is "+(Math.pow(si,n*t)));
}
}
public class account {
public static void main(String args[]) {
Scanner sc = new Scanner(System.in);
savings obj1 = new savings();
current obj2 = new current();
System.out.println("\n1.Savings account\n2.Current account");
int choice = sc.nextInt();
switch(choice) {
```

```
case 1:
    obj1.accept();
    obj1.display();
    obj1.cheque();
    obj1.deposit();
    obj1.interest();
    obj1.withdrawal();
    break;
case 2:
    obj2.accept();
    obj2.display();
    obj2.cheque();
    obj2.deposit();
    obj2.withdrawal();
    break;
default : System.out.println("Invalid choice");
}
}
}
```

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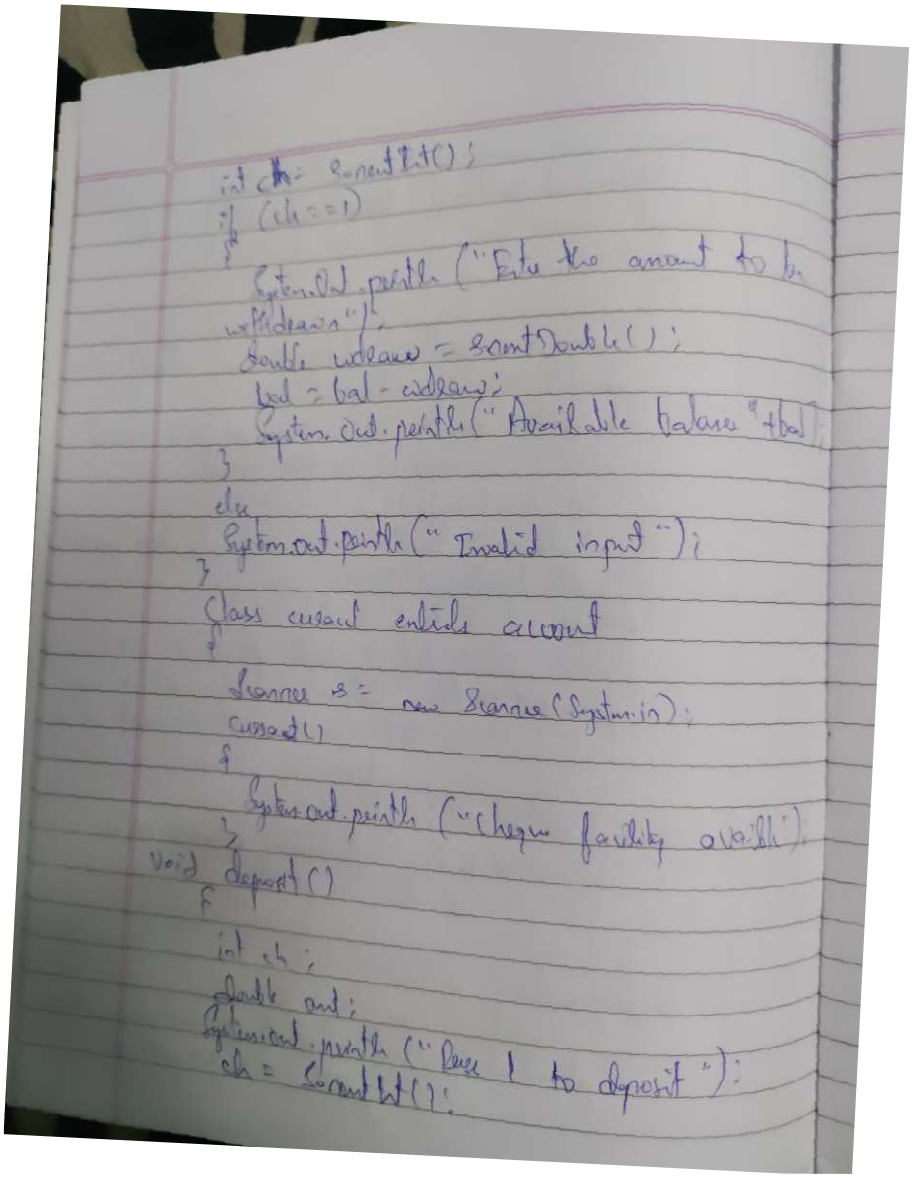
5. Develop a java program to create a class Bank that maintains two kinds of accounts called Savings account & other current account.

```
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" + "account no");
      accno = s.nextInt();
      System.out.println("Enter balance amount");
      bal = s.nextDouble();
    }
Void display()
{
    System.out.println("Customer name" + name);
```

```
System.out.println("Customer name" + name);
System.out.println("your account number" + accno);
System.out.println("your account balance" + bal);
}
account() { }
}
class saraact extends account
{
  Scanner s = new Scanner(System.in);
  saraact()
  {
    System.out.println("Unique 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("Extra amount 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();
    System.out.println(" Enter number of time interest
                applied per time period");
    int n= s.nextInt();
    System.out.println(" Enter number of time period");
    int t= s.nextInt();
double x = (1 + (r/n));
double Ci = bal * math.pow(x, n*t);
System.out.println(" Interest amount=" +Ci+ "\n
                Balance amount without interest is"+
                bal);
bal = bal + Ci;
System.Out.println(" Available balance after
                updating is"+bal);
}
void wd()
{
System.Out.println(" Press 1 to withdraw
                amount");
```



```
int ch = scanner.nextInt();
if (ch == 1)
{
  System.out.println("Enter the amount to be
withdrawn");
  double wdraw = scanInt.nextDouble();
  bal = bal - wdraw;
  System.out.println("Available balance "+bal);
}
else
System.out.println("Invalid input");
}
Class cusacct extends account
{
  Scanner s = new Scanner(System.in);
  cusacct()
  {
    System.out.println("Cheque facility available");
  }
void deposit()
{
  int ch;
  double amt;
System.out.println("Press 1 to deposit");
  ch = scanInt();
```

```
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()
{
  System.out.println("Press 1 to withdraw the
                      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");
```

```
if (bal < 1000)
{
System.out.println ("You are running out of minimum
        balance \n Penalty Amount of Rs 50
        has been deducted as service charge
        for having low balance");
bal = bal - 50;
System.out.println ("your available balance" + bal);
}
}
}

Public class lab5
{
  Public static void main (String xx[])
  {
    Scanner s = new Scanner (System.in)
    int ch;
    System.out.println ("\n\n Press \n 1. if your
          account is saving account \n
          2. if your account is current
          account");
    ch = s.nextInt()
    Switch (ch)
    {
      Case 1:
```

```
saract s1 = new saract();
 s1.set();
 s1.display();
 s1.deposit();
 s1.in()
  s1.wd();
  break;

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

Output

Press
1. if you account is Savings account
2. if you account is current account

1
Cheque facility not available
Enter customer name
Gagan
Enter Gagan's account number
123456
Enter balance amount
10000

Enter Customer name: gagan
your account number: 123456
your account balance = 10000

Press 1 to deposit
1
Enter Amount to be deposited
1000
Enter rate of interest
2
Enter number of times interest applied per time period
2

Enter number of time periods
2
interest amount = 176000
Balance amount without interest is 1100
Available balance after updating is 18700

Press 1 to withdraw amount
1
Enter the amount to be withdrawn
1000
Available Balance : 18600

Press
1. if your account is saving account
2. if your account is saving account
2

Cheque facility

Enter customer name:
Gagan
Enter gagan's account number
123456
Enter balance amount
10000

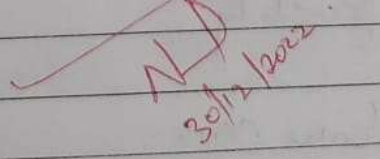
Customer name : Gagan
your account number : 123456
your account Balance : 10000

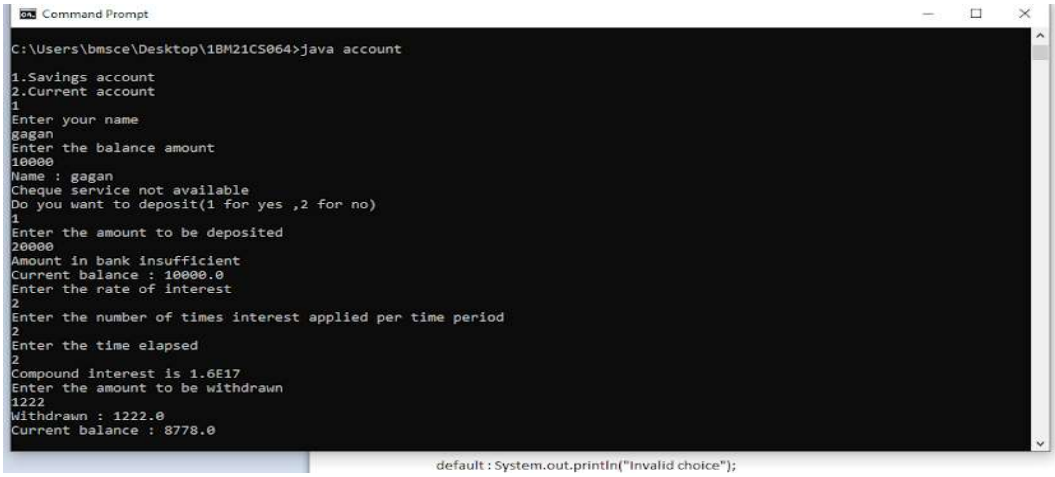
Press 1 to deposit
1

Enter amount to be deposited
1000

Press 1 to withdraw amount
1

Enter the amount to be withdrawn
1000
Available Balance : 10000




Command Prompt
C:\Users\bmsce\Desktop\1BM21CS064>java account
1.Savings account
2.Current account
1
Enter your name
gagan
Enter the balance amount
10000
Name : gagan
Cheque service not available
Do you want to deposit(1 for yes ,2 for no)
1
Enter the amount to be deposited
20000
Amount in bank insufficient
Current balance : 10000.0
Enter the rate of interest
2
Enter the number of times interest applied per time period
2
Enter the time elapsed
2
Compound interest is 1.6E17
Enter the amount to be withdrawn
1222
Withdrawn : 1222.0
Current balance : 8778.0
default : System.out.println("Invalid choice");